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The
AMERICAN UNIVERSITY
BULLETIN



COLLEGE of ARTS and SCIENCES

CATALOG ISSUE 1958-1961

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The American University



COLLEGE OF
ARTS AND SCIENCES

Bulletin Published by

THE AMERICAN UNIVERSITY

WASHINGTON, D. C.

JULY 1958



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Academic Calendar

REGULAR SEMESTERS*

1958-59

1959-60

1960-61

Fall Semester

Classes begin	Sept. 18	Sept. 16	Sept. 22
Veterans' Day holiday	Nov. 11	Nov. 11	Nov. 11
Thanksgiving recess	Nov. 27-30	Nov. 26-29	Nov. 24-27
Christmas recess	Dec. 21-Jan. 4	Dec. 20-Jan. 3	Dec. 20-Jan. 2
Final examinations	Jan. 19-27	Jan. 18-26	Jan. 23-31 and Feb. 3

Spring Semester

Classes begin	Feb. 5	Feb. 4	Feb. 9
Washington's Birthday holiday	Feb. 23 (evening classes meet)	Feb. 22 (evening classes meet)	Feb. 22
Spring vacation	Mar. 26-Apr. 1	Apr. 14-20	Mar. 30-Apr. 5
Final examinations	May 26-June 3 and June 6	May 25-June 2	May 29-June 8
Memorial Day holiday	May 30	May 30	May 30
University commencement	June 7	June 5	June 11

Summer Sessions—Dates to be announced.

* See University bulletin for each session for detailed schedule. The academic calendar given above is subject to adjustment or changes which will be announced prior to the opening of each semester.

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Table of Contents

Academic Calendar	2
Officers of Administration	4
Faculty	5
College of Arts and Sciences	17
Objectives	18
Study in the Nation's Capital	19
Admission Requirements	20
Financial Information	22
Scholarships and Loans	25
Curricula and Degrees	27
Counseling	33
Academic Information	34
Student Activities	37
Courses of Instruction	39
Division of Humanities	41
Division of Natural Sciences and Mathematics	65
Division of Social Science	87
Division of Education and Communication	113



Lincoln Memorial

Officers of Administration

Hurst R. Anderson, L.H.D., LL.D., Litt.D.	<i>President of the University</i>
Donald Derby, Ph.D.	<i>Dean of Administration</i>
William O. Nicholls, M.B.A.	<i>Treasurer of the University</i>
Edward W. Bauman, S.T.B., Ph.D.	<i>Chaplain of the University</i>
Albert W. Boldt, Ed.D.	<i>Dean of Students</i>
Susan Olson, M.A.	<i>Associate Dean of Students, Dean of Women</i>
Ernst Correll, Dr. oec. Publ.	<i>Foreign Student Advisor</i>
Stafford H. Cassell, M.S.	<i>Assistant to the President</i>
John Wakefield, B.S.	<i>Director of Admissions</i>
Lois E. Torrence, M.A.	<i>Registrar</i>
Anne Jensen, B.S. in L.S.	<i>Librarian</i>
Nathan A. Baily, Ph.D.	<i>Dean of the School of Business Administration</i>
Catheryn Seckler-Hudson, Ph.D.	<i>Dean of the School of Government and Public Administration</i>
Ernest S. Griffith, D.Phil., Litt.D.	<i>Dean of the School of International Service</i>
John S. Myers, LL.B.	<i>Dean of the Washington College of Law</i>
Richard W. Van Wagenen, Ph.D.	<i>Dean of the Graduate School</i>
Richard M. Bray, M.A.	<i>Associate Dean of Administration Director of the Division of General and Special Studies</i>

THE COLLEGE OF ARTS AND SCIENCES

Office of the Dean

Ralph C. John, Ph.D.	<i>Dean</i>
Austin Van der Slice, Ph.D.	<i>Associate Dean</i>
William L. Weifenbach, Jr., Ph.B.	<i>Associate Dean</i>
Mrs. Anita Solomon, B.A.	<i>Secretary</i>
Mrs. Sarah N. Diggs	<i>Secretary</i>
Mrs. Dorothy Courtney, A.A.	<i>Secretary</i>

Division Chairmen

Harold A. Durfee, Ph.D.	<i>Humanities</i>
Leo Schubert, Ph.D.	<i>Natural Sciences and Mathematics</i>
Charles K. Trueblood, Ph.D.	<i>Social Science</i>
Samuel Engle Burr, Jr., Ed.D.	<i>Education and Communication</i>

Faculty

For a listing of the members of the faculties of the other schools and colleges of the University refer to the bulletins of the School of Government and Public Administration, the School of International Service, the School of Business Administration, Washington College of Law, and the Graduate School.

FULL-TIME

- RAYMOND W. AIKEN (1957), B.S., M.A., Pennsylvania. Assistant Professor of English.
- MARY H. ALDRIDGE (1955), B.S., Georgia; M.A., Duke; Ph.D., Georgetown. Associate Professor of Chemistry.
- SARAH M. BAKER (1945), Pennsylvania Academy of Fine Arts; Academic Montparnasse; Phillips Memorial Gallery. Associate Professor of Art.
- MERRITT C. BATCHELDER (1935), B.A., Hillsdale; M.A., Columbia; Ph.D., Iowa. Professor of English.
- EDWARD W. BAUMAN (1957), B.A., DePauw; S.T.B., Ph.D., Boston University. Assistant Professor of Religion.
- JOHN E. BENTLEY (1923), M.A., Clark; S.T.B., M.R.E., Boston University; Th.D., McGill. Professor of Psychology.
- ALBERT W. BOLDT (1958), B.A., Gettysburg; M.A., Lehigh; Ed.D., University of Florida. Professor of Education.
- W. DONALD BOWLES (1957), B.A., University of Washington; M.A., Columbia; Ph.D., Columbia. Assistant Professor of Economics.
- LOTHAR BRABANSKI (1957), Master, Academy of Fine Arts in Berlin. Assistant Professor of Art.
- MARTHA C. BRADLEY (1955), B.S., M.S., Maryland. Assistant Professor of Biology.
- DAVID J. BRANDENBURG (1948), B.S., Bowdoin; M.A., Ph.D., Columbia. Associate Professor of History.
- RICHARD M. BRAY (1954), B.A., M.A., University of Colorado. Associate Professor.
- SUMNER O. BURHOE (1956), B.S., Massachusetts; M.S., Kansas State; Ph.D., Harvard. Professor of Biology.
- SAMUEL E. BURR, JR. (1947), Litt. B., Rutgers; M.A., Wisconsin; M.A., Columbia; Ed.D., Cincinnati. Professor of Education.
- DAVID L. CARRASCO (1956), B.A., Texas Western College; M.A., Maryland. Assistant Professor of Physical Education.
- STAFFORD H. CASSELL (1937), B.A., American; M.S., Pennsylvania State. Professor of Physical Education.
- CHARLES M. CLARK (1941), B.A., M.A., Ph.D., Cornell. Professor of English.
- ERNST CORRELL (1929), Ph.D., University of Munich. Professor of Economic History.
- HORACE D. CRAWFORD (1946), B.A., Hillsdale. Assistant Professor of Communication.
- ALVA L. DAVIS (1952), B.A., Indiana State Teachers College; M.A., Ph.D., Michigan. Professor of Languages.
- HAROLD E. DAVIS (1947), B.A., Hiram College; M.A., University of Chicago; Ph.D., Western Reserve. Professor of Latin American History and Government.
- DONALD DERBY (1947), B.A., Bowdoin; M.A., Ph.D., Harvard. Professor of History.
- JOHN W. DEVOR (1956), B.A., M.A., Kansas; Ph.D., University of Chicago. Professor of Education.
- ERNEST F. DIBBLE (1957), B.A., American. Instructor in History.
- HAROLD A. DURFEE (1955), Ph.B., Vermont; B.D., Yale; Ph.D., Columbia. Professor of Philosophy and Religion.
- ARTHUR A. EKIRCH, JR. (1947), B.A., Dartmouth; M.A., Ph.D., Columbia. Professor of History.
- ROBERT FRAILEY (1949), B.S., American. Instructor in Physical Education.
- JOHN G. FRANK (1948), Ph.D., University of Munich; Ph.D., Michigan. Professor of Languages.

- JOHN W. FREY (1947), B.S., University of Chicago; Ph.D., Wisconsin. Professor of Geology.
- ROBERT F. GATES (1946), Detroit School of Fine Arts; Detroit School of Arts and Crafts; Art Students League of New York; Phillips Gallery; Colorado Springs Fine Arts Center. Associate Professor of Art.
- FRANCIS W. GATHOF, JR. (1956) B.S., M.A., American. Instructor in Economics.
- ARTHUR D. GOLBY (1956), B.A., M.A., North Carolina. Assistant Professor of English.
- DOROTHY D. GONDOS (1947), B.A., Swarthmore; M.A., Ph.D., Pennsylvania. Professor of History.
- ROSS GUNN (1958), B.S.E. [E.E.], M.S., Michigan; Ph.D., Yale. Visiting Professor of Physics.
- VIRGINIA E. HAWKE (1950), B.S., M.A., Ohio State. Assistant Professor of Physical Education.
- EVELYN SWARTHOUT HAYES (1951), B.M., Kansas. Assistant Professor of Music.
- IRMA E. HOCHSTEIN (1953), B.A., M.A., Wisconsin. Instructor.
- MARY ANN G. HOOD (1957), B.A., M.A., Michigan State. Instructor in English.
- ANNE JENSEN (1930), B.A., Des Moines University; B.S. in L.S., Illinois. Professor.
- RALPH C. JOHN (1949), B.A., Berea College; S.T.B., S.T.M., Boston University; Ph.D., American. Professor of Philosophy and Religion.
- ROBERT W. JONES (1958), B.S., American; M. Ed., Pennsylvania State. Instructor in Education.
- GLADYS V. JORGENSON (1944), B.A., M.A., Wisconsin; R.N., Henry Ford Hospital School of Nursing. Assistant Professor of Nursing Education.
- ANDREW KECK (1946), B.A., Williams College; M.A., M.F.A., Princeton. Professor of Art.
- WILLETT M. KEMPTON (1948), B.A., M.A., Wisconsin. Professor of Communication.
- RALPH B. KENNARD (1958), B.E. [C.E.], M.A., Columbia, Ph.D., University of Chicago. Professor of Physics.
- DAVID J. KING (1958), Ph.D., University of Maryland. Assistant Professor of Psychology.
- FRANCES H. KING (1957), B.A., Western College for Women; M.A., Ohio State. Instructor in English.
- THEODORE H. LEVIN (1947), B.A., M.A., Brooklyn. Associate Professor of Economics and Business Administration.
- FRANK LORIMER (1938), B.A., Yale; M.A., University of Chicago; B.D., Union Theological Seminary; Ph.D., Columbia. Professor of Sociology and Anthropology.
- GEORGE LOVE (1957). B.S., M.A., Columbia. Instructor in English.
- RUTH E. McFEETER (1955), B.S., Beaver College; M.A., Columbia. Assistant Professor of Physical Education.
- JAMES L. McLAIN (1934), B.A., George Washington; Peabody Conservatory of Music. Professor of Music.
- HARVEY C. MOORE (1951), B.A., Delaware; Ph.D., New Mexico. Professor of Sociology and Anthropology.
- MARY MORRIS (1956), B.S., M.S., Kansas State. Professorial Lecturer in Family Life.
- ALBERT P. MOTT (1958), B.A., M.A., University of Missouri; Ph.D., University of California. Assistant Professor of History.
- SIMON NAIDEL (1948), B.S., College of the City of New York; M.A., Columbia; Ph.D., American. Associate Professor of Economics.
- RUBERTA M. OLDS (1930), Ph.B., University of Chicago; M.A., Columbia. Associate Professor of Languages.
- SUSAN OLSON (1958), B.A., American; M.A., Columbia. Assistant Professor of Education.
- ALICE A. PADGETT (1958), B.S., American; M.A., Johns Hopkins; Ph.D., Catholic. Associate Professor of Chemistry.

- MARY M. PATTON (1943), B.A., Kalamazoo College; M.A., Columbia. Associate Professor of English.
- NIKOS G. PHOTIAS (1949), B.A., Athens; M.B.A., Handelshochschule, Koenigsberg; M.Sc.Pol., Ph.D., Albertus University, Koenigsberg; LL.D., Friedrich Wilhelm University, Berlin. Professor of Business Administration.
- HARVEY J. POPE (1955), B.A., Alabama; M.A., Northwestern. Associate Professor of Communication.
- ERNST POSNER (1939), Ph.D., University of Berlin. Professor of History.
- GRACE S. QUINN (1956), B.A., B.S., M.A., Ph.D., Ohio State. Assistant Professor of Mathematics.
- LUCILLE REIFMAN (1957), B.A., Brooklyn College. Instructor in Mathematics and Statistics.
- WYLIE H. RUSSELL (1958), A.B., Oklahoma City; M.Ed., M.A., Ed.D., George Washington. Assistant Professor of Education.
- STEVEN H. SCHOT (1957), B.S., American; M.A., Ph.D., Maryland. Assistant Professor of Mathematics.
- LEO SCHUBERT (1950), B.S., College of the City of New York; M.S., New York University; Ph.D., Maryland. Professor of Chemistry.
- JOHN C. SCOTT, JR. (1957), B.S., Springfield College; M.A., Ph.D., University of Chicago. Assistant Professor of Sociology and Anthropology.
- GENEVIEVE M. C. SIMHA (1951), B.A., Antioch College; B.S., in L.S., Columbia. Assistant Professor.
- ROGER T. SIMONDS (1958), B.A., M.A., Ph.D., Yale. Assistant Professor of Philosophy.
- BANCROFT W. SITTERLY (1947), B.A., M.A., Ph.D., Princeton. Professor of Physics.
- GORDON SMITH (1947), B.M., Wooster; B.Sc., Mus., M.A., Mills; Ph.D., State University of Iowa. Professor of Music.
- JOHN H. SMITH (1947), B.A., Iowa State Teachers College; M.B.A., Ph.D., Chicago. Professor of Statistics.
- DOROTHY H. SPITZ (1955), B.A., California; B.S. in L.S., Southern California. Assistant Professor.
- GEORGE STEINER (1951), B.S., Johns Hopkins; B.M., M.M., Peabody Conservatory of Music. Assistant Professor of Music.
- BEN L. SUMMERFORD (1950), B.A., M.A., American. Associate Professor of Art.
- FRANK M. TAMAGNA (1958), Ph.D., Yale; LL.D., Pavia. Professor of Economics.
- CHARLES K. TRUEBLOOD (1949), B.S., Earlham College; M.A., Ph.D., Harvard. Professor of Psychology.
- MELVILLE J. ULMER (1943), B.S., M.A., New York University; Ph.D., Columbia. Professor of Economics.
- AUSTIN VAN DER SLICE (1946), B.A., M.A., Kansas; Ph.D., Pennsylvania. Professor of Sociology and Anthropology.
- CHARLES W. VAN WAY, JR. (1956), B.S., United States Military Academy; M.B.A., American. Assistant Professor of Business Administration.
- S. M. VINOCOUR (1956), B.A., Southern California; M.A., Nevada; Ph.D., Pennsylvania State. Assistant Professor of Speech.
- RUDOLPH VON ABELE (1947), B.A., Ph.D., Columbia. Associate Professor of English.
- JOHN WAKEFIELD (1957), B.S., American. Assistant Professor of Education.
- WILLIAM L. WEIFENBACH, JR. (1958), Ph.B., Wisconsin. Graduate study Wisconsin, University of California at Los Angeles, Columbia. Assistant Professor of Philosophy.
- ELLIS WEITZMAN (1946), B.A., Emory; M.A., Creighton; Ph.D., Nebraska. Professor of Psychology.
- JAMES WILLIAMS (1957), B.S., American; M.S., Pennsylvania State. Instructor in Physical Education.
- KATHRYN DAY WYATT (1945), B.A., Meredith College; M.A., Middlebury. Assistant Professor of Languages.

- JACK H. YOCUM (1955), B.A., Washburn Municipal University; M.A., Iowa State; Ph.D., Wisconsin. Associate Professor of Speech and Drama.
- LOUISE YOUNG (1954), B.A., Ohio Wesleyan; M.A., Ph.D., Pennsylvania. Associate Professor of English.

EMERITI

- HAZEL H. FEAGANS (1929), B.A., B.E., George Washington; M.A., American. Emeritus Professor of English.
- FRITZ KARL MANN (1936), Dr.Jur., Goettigen; Ph.D., Berlin. Emeritus Professor of Economics.
- LEON C. MARSHALL (1936), B.A., LL.D., Ohio Wesleyan; B.A., M.A., Harvard. Emeritus Professor of Political Economy.
- PITMAN B. POTTER (1944), B.A., M.A., Ph.D., Harvard. Emeritus Professor of International Relations.
- WALTER F. SHENTON (1925), B.Sc., M.A., Dickinson; Ph.D., Johns Hopkins. Emeritus Professor of Mathematics.
- MARY LOUISE BROWN TEETER (1925), B.A., DePauw; M.A., Michigan. Emeritus Professor of English.
- GEORGE B. WOODS (1925), B.A., Northwestern; M.A., Ph.D., Harvard. Emeritus Professor of English.

PART-TIME

- SIDNEY J. ABEL (1958), Lecturer in Communication.
- QUINCY ADAMS (1956), B.A., New York University; M.A., Ph.D., American. Professorial Lecturer in Economics.
- HANS H. ADLER (1958), B.S., College of the City of New York; M.A., Columbia. Lecturer in Geology.
- JOHN H. ADLER (1957), M.A., Ph.D., Yale. Adjunct Professor in Economics.
- COLIN J. ALBU (1957), B.A., Cambridge. Lecturer in English.
- JOHN ALEXANDER (1957), B.A., Columbia; Ph.D., American. Lecturer in History.
- EDWARD L. ALLEN (1949), B.S., Columbia; M.A., Ph.D., American. Adjunct Professor of Economics.
- HARRY ALPERT (1947), M.A., Ph.D., Columbia. Adjunct Professor of Sociology and Anthropology.
- FRANZ L. ALT (1951), Ph.D., Vienna. Professorial Lecturer in Mathematics and Statistics.
- HOWARD ANDREWS (1958), B.S., M.S., Ph.D., Brown. Lecturer in Chemistry.
- ALFORD ARCHER (1956), B.S., M.S., Columbia. Lecturer in Economics.
- ROBERT J. ARMS (1956), B.A., M.A., University of Saskatchewan; Ph.D., Queen's University of Canada. Lecturer in Mathematics and Statistics.
- HENRY D. ARNETT (1958), A.B., West Virginia; M.S., Illinois. Lecturer in Mathematics and Statistics.
- LUCILE K. ARNETT (1958), B.S., Salem College; M.S., West Virginia. Lecturer in Mathematics and Statistics.
- JOHN W. ASHER (1958), Professorial Lecturer in Education.
- JOHN F. ATKINSON (1957), B.S., [E.E.], Florida; M.S., Harvard. Lecturer in Physics.
- L. JAY ATKINSON (1955), B.A., B.S., Arkansas; M.S., Texas A & M; Ph.D., Iowa State College. Lecturer in Economics.
- LILLIAN M. AXTELL (1957), B.A., Iowa State Teachers College; M.A., Michigan. Lecturer in Mathematics and Statistics.
- JANET BABIGAN (1957), A.B., George Washington. Lecturer in Music.
- WILLIAM BACK (1958), A.B., Illinois; M.S., California; M.P.A., Harvard. Lecturer in Geology.
- JAMES D. BAILEY (1953), B.A., M.A., American. Professorial Lecturer in Communication.

- JOHN C. BALLOCH (1955), M.S., M.A., Boston University; Ph.D., Michigan. Professorial Lecturer in Psychology.
- ESTHER W. BALLOU (1957), Bennington College; M.A., Mills College. Lecturer in Music.
- DANIEL BANES (1954), B.S., M.S., University of Chicago; Ph.D., Georgetown. Adjunct Professor of Chemistry.
- HERBERT C. BARNETT (1957), B.S., Cornell; M.S., Minnesota; Ph.D., Pittsburgh. Lecturer in Biology.
- LOY BAXTER (1957), A.B., Indiana. Professorial Lecturer in Communication.
- SEYMOUR BEARDSLEY (1955), B.A., Yale; M.A., Ph.D., Columbia. Professorial Lecturer in Psychology.
- LAWRENCE BECKERMAN (1947), B.A., Brooklyn College; LL.B., George Washington. Adjunct Professor of Communication.
- FRED BEGUN (1954), B.S., Juilliard School of Music. Lecturer in Music.
- WILMER F. BENNETT (1953), B.S., Wilson Teachers College; M.A., Columbia. Adjunct Professor of Education.
- STANLEY K. BIGMAN (1953), B.A., College of the City of New York; M.A., Columbia. Lecturer in Sociology and Anthropology.
- NORMA BIRD (1957), Ph.D., Columbia. Lecturer in Psychology.
- ERNEST E. BLANCHE (1946), B.A., M.A., Bucknell; Ph.D., Illinois. Adjunct Professor of Mathematics and Statistics.
- LLOYD D. BLACK (1946), B.A., Toronto University; M.A., Clark; Ph.D., Michigan. Adjunct Professor in Economics.
- STANLEY BLOCK (1958), M.A., Ph.D., Johns Hopkins. Lecturer in Chemistry.
- ELLEN F. BODMAN (1957), A.B., Smith College; M.A., University of North Carolina. Lecturer in History.
- HERBERT BODMAN (1956), B.A., North Carolina; M.A., Ph.D., Princeton. Lecturer in History.
- NATLIE BOES (1957), Beslugu University, St. Petersburg, Russia. Lecturer in Languages.
- RICHARD L. BOLSTER (1957), B.S., American; M.B.A., New York University. Lecturer in Business Administration.
- LEO BORAH (1957), A.B., Litt.D., Huron College; M.A., Washington. Lecturer in Art.
- HARRY BORNSTEIN (1955), B.A., Rutgers; M.A., Fordham; Ph.D., American. Professorial Lecturer in Psychology.
- MARGARET I. BOUTON (1956), B.A., M.A., Ph.D., Wellesley. Lecturer in Art.
- ROBERT J. BOWER (1949), B.A., Columbia; Ph.D., Yale. Adjunct Professor of Sociology and Anthropology.
- WALLACE BRADLEY (1957), B.S., M.S., Syracuse. Lecturer in Communication.
- JOSEPH BRAM (1958), B.S., Roosevelt College; M.S., Ph.D., University of Chicago. Professorial Lecturer in Mathematics and Statistics.
- GERARD BRANNON (1956), B.A., M.A., Georgetown; Ph.D., Harvard. Lecturer in Economics.
- IRVING BREGER (1957), B.S., Worcester Polytechnic Institute; M.S., Ph.D., Massachusetts Institute of Technology. Lecturer in Chemistry.
- BALFOUR BRICKNER (1955), B.A., University of Cincinnati; Master of Hebrew Letters, Hebrew College. Lecturer in Religion.
- FLOYD E. BROOKER (1944), B.A., Marietta College; M.A., Columbia. Adjunct Professor of Communication.
- GEORGE W. BROOKS (1948), B.A., Yale; M.A., Brown. Professorial Lecturer in Economics.
- FRANCIS J. BROWN (1954), B.S., Iowa; M.A., Columbia; Ph.D., New York University. Adjunct Professor of Education.
- ROBERT W. BRYANT (1955), B.A., Denison. Lecturer in Mathematics and Statistics.
- EVELYN L. BULL (1953), B.A., M.A., Michigan. Professorial Lecturer in Education.

JAMES CAHILL (1958), A.B., California; M.A., Michigan. Lecturer in Art.

WILLIAM CALFEE (1944), Beaux Arts, Paris. Lecturer in Art.

LUDWIG CAMINITA, JR. (1950), B.S., M.A., George Washington. Adjunct Professor of Communication.

HOWARD CAMPAIGNE (1952), B.S., M.S., Ph.D., Northeastern. Adjunct Professor of Mathematics and Statistics.

ARTHUR CARNDUFF (1958), Lecturer in Mathematics and Statistics.

C. F. CARPENTER (1957), B.A., M.A., George Washington. Lecturer in English.

RANDALL CASWELL (1957), S.B., Ph.D., Massachusetts Institute of Technology. Professorial Lecturer in Physics.

HARRY L. CHASEY (1953), B.S., Rutgers; M.A., George Washington. Lecturer in Education.

ABE CHERRY (1956), Lecturer in Music.

EWAN CLAGUE (1936), B.A., M.A., Washington; Ph.D., Wisconsin. Adjunct Professor of Sociology and Anthropology.

CHESTER R. CLARK (1958), B.A., Kentucky Wesleyan. Lecturer in Mathematics and Statistics.

DONALD CLEMMER (1958), B.A., Cornell; M.A., Illinois. Professorial Lecturer in Sociology and Anthropology.

JOHN C. CLENDENIN (1958), A.B., B.S., Mansfield College. Lecturer in English.

SUSA CONDLIFFE (1956), B.A., University of California. Lecturer in Mathematics and Statistics.

MARK H. CONNER (1957), B.A., American; M.S., Ph.D., Maryland. Professorial Lecturer in Biology.

EDWARD T. CORNELIUS, JR. (1956), B.D., Yale. Assistant Professor of Religion and Philosophy.

JEROME CORNFIELD (1950), B.S., New York University. Adjunct Professor of Mathematics and Statistics.

ALBERT C. CORNSWEET (1948), P.L.B., Brown; M.A., Oxford. Professorial Lecturer in Psychology.

VIRGINIA I. COTTEN (1956), B.A., Radcliffe; M.S., Columbia. Lecturer in English.

GEORGE CREEL (1956), B.A., Alabama Polytechnic Institute; M.S., Wisconsin. Adjunct Professor in Communication.

KENNETH CROFT (1954), B.A., B.A.L.S., Oklahoma; M.A.L.S., Michigan; M.A., Ph.D., Indiana. Associate Professor of English.

HARRY CULLIS (1958), B.S., American. Lecturer in Communication.

EDWARD C. CUMMINGS (1956), A.B., Notre Dame. Lecturer in English.

RUTH M. DAVIS (1957), B.A., American; M.A., Ph.D., Maryland. Lecturer in Mathematics and Statistics.

MARY JANE P. DAY (1958), B.S., M.A., Wisconsin. Lecturer in History.

MARY R. DEARING (1955), B.A., University of Chattanooga; M.A., Washington University. Professorial Lecturer in History.

JOHN T. DE CAMP (1957), B.S., West Point; M.B.A., Cambridge. Lecturer in English.

CARL DEGEN (1958), Lecturer in Communication.

B. WILLARD DE SHAZO (1954), B.A., Wake Forest; M.A., Virginia; Ed.D., Oregon. Adjunct Professor of Education.

PHILIP DESIND (1957), B.S., M.S., College of the City of New York. Professorial Lecturer in Mathematics and Statistics.

HOWARD F. DIDSBURY, JR. (1956), B.A., Yale; M.A., Harvard. Professorial Lecturer in Education.

RICHARD W. DIRKSON (1954), Certificate, Peabody Conservatory of Music. Lecturer in Music.

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- DONALD M. DOZER (1950), B.A., College of Wooster; M.A., Harvard. Professorial Lecturer in History.
- THELMA DRIES (1957), B.S., M.A., Minnesota; Ph.D., American. Lecturer in Psychology.
- DARRELL L. DRUMMOND (1957), A.B., George Washington. Lecturer in English.
- FRANKLIN DUNHAM (1952), Mus.D., New York College of Music; Litt.D., St. Bonaventure; L.H.D., St. Michaels; LL.D., Marquette University. Adjunct Professor of Communications.
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- LOUIS L. ECKER-RACZ (1954), B.A., Ph.D., Harvard. Professorial Lecturer in Economics.
- MANUEL EBER (1952), A.B., University of Rochester; A.M., University of Chicago. Professorial Lecturer in Economics.
- LYNN EDMISTER (1956), B.A., Harvard; Ph.D., Brookings Institution. Professorial Lecturer in Economics.
- LYNN EGBERT (1957), A.B., University of California; M.A., North Carolina. Lecturer in Art.
- MARGUERITE C. EGELER (1958), B.M., Michigan. Lecturer in Music.
- CHURCHILL EISENHART (1951), A.B., A.M., Princeton; Ph.D., University of London, England. Lecturer in Mathematics and Statistics.
- GERALD W. ELBERS (1956), A.B., Middlebury; M.A., Minnesota. Lecturer in English.
- JOHN L. ENDACOTT (1948), B.A., M.A., Ph.D., Kansas. Adjunct Professor of Psychology.
- FRITZ T. EPSTEIN (1946), Ph.D., University of Berlin. Professorial Lecturer in History.
- W. DUANE EVANS (1947), B.S., Clarkson College. Professorial Lecturer in Economics.
- F. G. EYCK (1957), B.A., Alma College; M.A., Ph.D., New York University. Lecturer in History.
- GEORGE FAUST (1956), B.S., Pennsylvania State College; M.S., Ph.D., Michigan. Lecturer in Geology.
- STANLEY FIELD (1952), B.A., Brooklyn College. Adjunct Professor of Communication.
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- EDMUND N. FULKER (1954), B.S., Dartmouth; M.S., Purdue. Professorial Lecturer in Psychology.
- J. HERBERT FURTH (1948), J.S.D., University of Vienna. Adjunct Professor of Economics.

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- DONALD C. HORTON (1947), M.A., Ohio; Ph.D., Michigan. Lecturer in Economics.
- FRANCES B. HUGHES (1957), B.A., Radcliffe; M.A., Ph.D., Columbia. Lecturer in Philosophy.
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- MURRAY ROSS (1945), B.S., College of the City of New York; M.A., Ph.D., Columbia. Adjunct Professor of Economics.
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- CARL L. SHIPLEY (1951), B.S., Georgetown; LL.B., Harvard Law School. Adjunct Professor in Communication.
- JULIUS SHISKIN (1955), B.A., M.A., Rutgers. Professorial Lecturer in Economics.
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- BERTRAM W. STRAUSS (1952), B.S., Pennsylvania. Lecturer in Psychology.

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- AMOS E. TAYLOR (1937), B.A., Gettysburg College; M.A., University of Chicago; Ph.D., Pennsylvania. Adjunct Professor of Economics.
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- DAVID A. VON SOTHEN (1958), B.S., M.S., Northwestern. Lecturer in Communication.
- DONALD WAGMAN (1957), B.S., M.S., George Washington. Lecturer in Chemistry.
- LOUISE S. WALKER (1954), B.A., Sam Houston State Teachers College; M.Ed., University of Texas. Lecturer in Education.
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- ROBERT N. WALKER (1952), B.S., Virginia; M.Ed., Pittsburgh; Ph.D., Virginia. Adjunct Professor of Education.
- CAROLINE F. WARE (1936), B.A., Vassar; M.A., Ph.D., Radcliffe. Professorial Lecturer in Sociology and Anthropology.
- IVOR WAYNE (1950), M.A., Harvard. Lecturer in Sociology.
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- OSCAR W. WEIGERT (1938), Dr.Jur., Marburg. Adjunct Professor of Sociology and Anthropology.
- ISAAC D. WELT (1956), B.S., McGill; Ph.D., Yale. Professorial Lecturer in Chemistry.
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- WALTER H. WOOD (1956), George Washington. Lecturer in Communication.
- HAROLD WRIGHT (1954), B.M., Curtis Institute. Lecturer in Music.
- ZOE M. WYTHE (1948), A.B., M.A., George Washington. Professorial Lecturer in English.
- KENNETH W. YEAGER (1958), B.A., M.A., University of Pittsburgh; Ph.D., University of Pennsylvania. Lecturer in Sociology and Anthropology.
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The year in parentheses following each name denotes the year in which the faculty member was first appointed.



College of Arts and Sciences

The American University was chartered by an act of the Congress of the United States on February 24, 1893. The purpose of its founders, under the leadership of Bishop John Fletcher Hurst of The Methodist Church, was to establish in the Nation's Capital a university to reflect the distinctive values of the Protestant heritage and to be dedicated to the best traditions of American higher education. For an uptown campus Bishop Hurst chose a seventy-five-acre tract in northwest Washington, the site of old Fort Gaines, a historic Civil War military installation. Some years later additional property was purchased near the White House for the development of a Downtown Center.

The University was officially opened on May 14, 1914, in ceremonies in which President Woodrow Wilson and a distinguished group of statesmen, educators, and churchmen participated. As in the case of several other universities chartered toward the end of the nineteenth century, the first programs and degrees were restricted to the graduate level. The need was soon recognized, however, for an undergraduate division. The consequence was the organization of the College of Liberal Arts in 1925. This college was the forerunner of the present College of Arts and Sciences.

The American University of today is a community of schools and colleges closely related to each other in serving the general objectives of the institution. In addition to the College of Arts and Sciences, there are the School of Business Administration, the School of Government and Public Administration, the School

of International Service, the Graduate School, the Washington College of Law, and the Division of General and Special Studies. The Wesley Theological Seminary, one of the ten theological schools of The Methodist Church, also is located on the campus.

Under the general direction of the Dean of the College of Arts and Sciences, the seventeen departments of instruction are organized into four divisions—the Division of Humanities, the Division of Natural Science and Mathematics, the Division of Social Sciences, and the Division of Education and Communication.

Annually a member of the faculty of each of the four divisions is elected division Chairman. These Chairmen serve with the Dean and the Associate Deans as the Standing Committee of the College. This committee performs executive and advisory functions, and assists in planning and in the evaluation of curricular offerings.

This catalog describes the purposes, courses, and activities of the College of Arts and Sciences.

Objectives

The College of Arts and Sciences is the branch of the University primarily concerned with liberal studies. These studies are pursued for their intrinsic value, for pre-professional academic qualifications, and for the fundamental understanding which they give of life, our cultural heritage, and the universe in which we live. The objectives of the College are as follows:

To provide students with a knowledge of the physical world and the principles operative in it.

To describe and interpret social institutions, movements, and relationships and to inspire responsible citizenship in the nation and the world.

To present in balanced perspective the cultural heritage of the Western World and to stimulate through systematic study an appreciation of cultures other than our own.

To develop an understanding of the basic concepts of modern science and, according to the needs and interests of the individual, to give either a broad orientation or specialized competence in science as an area of knowledge important to human experience.

To cultivate aesthetic sensitivity to the values of good literature, the fine arts, and the expression of beauty through other forms.

To help the student think independently and creatively and to develop skill in the use of the methods of systematic thought, research, and judgment.

To motivate individuals toward socially significant and personally satisfying life goals.

To encourage moral growth and responsibility, religious interest and understanding, and the development of a seriously conceived philosophy of life.

To reflect through general interests, the curriculum, and extra-curricular activities the Christian orientation of the University while recognizing the fundamental sanctity of academic freedom and the right of each individual to seek and find his own answers on ultimate issues.

To serve all the schools and colleges of the University with a general education program established by the Faculty and to represent the values of liberal studies in the University community.

To encourage scholarship and to challenge the ability of superior students through honors programs and other forms of independent study.



Study in the Nation's Capital

Washington is a national symbol and an important crossroad of the world. It is a city of exciting persons, places, and events. The student who works toward his educational goals at The American University has the advantage of the rich resources of this center of stimulating cultural opportunity.

The Nation's Capital affords an excellent environment for the study of the arts and sciences. An impressive array of events and institutions supplements the educational program of the University.

Excellent library facilities hold an invaluable wealth of material for serious-minded students. The Library of Congress houses one of the largest collections of books in the world. The District of Columbia Public Library, the Folger Shakespearean Library, the National Archives, the Smithsonian Institution, and many other government agencies make available both general and specialized collections of great importance. These libraries with their extensive holdings and trained personnel help to provide conditions significantly congenial to scholarly achievement.

There are many attractions in the fields of the arts. The year-round schedule of events is rich and varied. The National Gallery of Art is the location of frequent lectures, special exhibits, and musical concerts. The National Symphony Orchestra and the National Theatre are two widely acclaimed institutions in the life of the city. There are numerous addresses of national and international interest, visits by world figures, and the aesthetic thrill of seeing personally Washington's classically beautiful buildings and monuments.

The Nation's Capital is a center of scientific activity. The National Bureau of Standards and the Naval Observatory are near the University. Other local scientific organizations, as the National Institutes of Health and the Weather Bureau, make significant and sometimes historic contributions in this century when scientific progress is of commanding importance. Many students gain invaluable experience through part-time employment with these institutions during their university careers.

Washington is a city of churches and much religious activity. Most faiths have national shrines which stand in majestic testimony of the place of religion in American life.

One of Washington's most attractive features is its cosmopolitan character. It is host to an international community representative of the traditions and values of nations in all parts of the world. A free exchange of ideas through personal associations and community activities develops new interests and appreciations.

Many overseas students attend The American University. Some live in residence halls on campus. Others are members of families associated with the embassies which are so prominent a part of the Washington scene.

The Nation's Capital—a colorful world city—offers much to students whose educational objectives are in the fields of the arts and sciences.

Admission Requirements

Application for admission to any school or college of the University should be submitted to the Director of Admissions, The American University, Washington 16, D. C., well in advance of the session for which the student is applying. Applications are evaluated on the basis of academic and personal qualifications in accordance with standards stated in the University Code of Admissions. Students may enter at the beginning of any session—Fall, Spring, or Summer.

ADMISSION TO UNDERGRADUATE STATUS

Those desiring admission to undergraduate status must submit with the regular application form (1) an official transcript from the high school from which graduated, (2) a personally executed and signed Report of Medical History Form (physical examinations are given all undergraduates by the University Physician at the time of registration), (3) a non-refundable application fee of \$10, and (4) a recent photograph. The application fee (until July 1, 1959), photograph, and Medical History Form are not required of applicants for part-time study.

Freshman Standing

Graduates of approved secondary schools who have 15 acceptable units (at least 10 of which must be in academic or college preparatory courses) with a minimum grade average of C, and who rank in the upper half of their graduating class, may be considered for freshman standing in the college.

In exceptional cases eligibility for admission may be determined on the basis of standardized tests administered by the Admissions Office.

The Scholastic Aptitude Test of the College Entrance Examination Board will be required of all full-time freshman applicants seeking admission to the University beginning with the Fall Session, 1959.

Advanced Standing

Graduates of approved junior colleges or students with acceptable records in other approved colleges and universities may apply for transfer to the University with advanced standing. Applicants must have maintained a satisfactory average in the institution previously attended. Credit may be granted for courses completed with a grade of C or better, if these courses are comparable to courses offered at The American University. Junior college graduates may transfer a maximum of 63 credit hours.

ADMISSION TO GRADUATE STATUS

Admission to graduate study is open to students who hold bachelor's degrees from approved undergraduate colleges and whose academic performance and other qualities indicate promise of success in an advanced degree program.

In very exceptional cases applicants who do not meet these qualifications may be considered for admission on the basis of standardized tests or other credentials which indicate background and ability to meet the requirements in a program of advanced study.

Admission to graduate study does not constitute admission to candidacy for a graduate degree. For more details consult the *Graduate School Bulletin*.

ADMISSION OF NON-DEGREE STUDENTS

A student who does not plan to enroll in a degree program at The American University may apply for admission to courses for which he has the necessary background and special qualifications. If admitted, his enrollment is in the Division of General and Special Studies.

A non-degree student who establishes eligibility for admission to full standing may use a limited number of credits earned in this status (not more than 30 if an undergraduate and not more than 9 if a graduate) to meet the requirements of a degree at the University if the courses are appropriate to the degree sought. Non-degree students (except auditors) must participate in all class activities and are held to the same standards of performance as degree students.

Auditors

Properly qualified students may be admitted to auditor status for study in certain specific fields. Such students will receive no grade or credit for this work.

Transfer Credit

A student who wishes to take courses at The American University for credit toward the requirements of a degree at another college or university may do so by presenting a statement from an authorized official of that institution certifying that he is in good standing and that the credits earned will be accepted on transfer.

Financial Information

Tuition—Tuition charges in effect during the year 1958-1959 are as follows (except in the case of certain institutes and special courses for which a different charge is indicated in the description):

Full-time undergraduate students (12-18 hours)	\$350 a session
Full-time law students (12-14 hours)	\$280 a session
All other students	\$20 a credit hour

Auditors pay the same tuition as students enrolled for credit and they are subject to all applicable fees listed below.

General Fees (not refundable)—The following fees are in effect during the year 1958-1959:

Application fee for degree students (applicable to all full-time students prior to July 1, 1959, and to all students thereafter)	\$10
Late registration (effective opening day of each session and applies to auditing students also)	\$5
Transfers from one course or section to another and changes in status	\$3 each
Late payment and reinstatement fee	\$5
Student activities fee (included in tuition of full-time undergraduates, optional for others who participate in the University's athletic and social activities)	\$15 a session
Health fee (included in tuition of full-time undergraduates, required of all other students residing in University facilities)	\$10 a session
Deferred, special, or makeup examinations	\$5 each examination
Examinations for validation of credit	\$5 a credit hour
Admission testing	\$2 each test
Official transcripts (after first—not available during registration periods)	\$1 each

Fees for Graduate Students—The following charges are applicable to graduate students only:

Graduate study fee (for full-time and part-time graduate students who have completed course work and thesis seminar requirements)	\$20 a session
Comprehensive examinations (with each application)	
For master's degree	\$15
If taken in absentia	\$40
For doctor's degree	\$25
If taken in absentia	\$65
Supervision of thesis (if no thesis seminar completed)	
For master's degree	\$60
For doctor's degree	\$120
Binding or microfilming of thesis or case studies	
Binding	(\$6-30)
Microfilming (doctoral only)	\$35

Graduation fees—All candidates for degrees must pay, before May 15 of the year in which they receive their degree, the following graduate fees:

Associate degrees	\$10
Bachelor's degrees (except law)	\$20
Graduate and law degrees	\$25

Rental charges for academic regalia worn during the Commencement exercises are in addition to the graduation fee.

Course and laboratory fees—Special fees are charged for certain courses as indicated in the published description of the courses to which they apply. They are in addition to the usual tuition charges and are not refundable. A student responsible for breakage or damage to equipment in any class must pay for losses incurred before he will be admitted to the final examination.

Deferred payment plans—Full-time students may arrange to pay one-third of their tuition fees, room and board charges at registration and the balance in three equal payments. The charge for this deferred payment plan is \$5.

Students registered for three or more credit hours of course work may arrange to pay one-half of their tuition at registration and the balance at a later date. The charge for this plans is \$2.

Students registered for six or more credit hours of course work may arrange to pay one-third of the tuition at registration and the balance in two equal payments. The charge for this plan is \$3. No deferred payment plan is available for students registered for less than three credit hours. Session course announcements list payment dates for these plans.

Suspension for Non-payment—Students who do not make payments on or before the due dates will be financially suspended and barred from classes and charged a reinstatement fee of \$5. If this fee and the payment are not paid within two weeks after the original date due, the student will be academically suspended for the session. Classes missed as a result of failure to pay obligations will be considered unexcused absences.

Cancellations and refunds—Cancellations will be allowed only after the execution of withdrawal forms provided for the purpose by the Registrar and the amount to be cancelled will be calculated as of the date indicated by the Bursar on signing it. A student permitted to withdraw from classes during the fall and spring sessions is entitled to a refund of charges for tuition in accordance with the following schedule:

Withdrawal before the first day of the session	all except \$5
Withdrawal during the first and second week of the session	80%
Withdrawal during the third and fourth week of the session	60%
Withdrawal during the fifth week of the session	40%
Withdrawal during the sixth week of the session	20%
Withdrawal after the sixth week of the session	no refund

Refunds for meal tickets in case of withdrawal will be prorated on a weekly basis. Charges for dormitory rooms are not refundable, nor are course and laboratory fees where charged. Full-time undergraduate students permitted to withdraw are not entitled to refund of any part of the student activities fee of \$15 a session that is included in the full-time undergraduate tuition.

Charges Payable in Advance—Charges are payable before registration is completed. No student will be permitted to register from session to session or to receive credit for work completed for a degree unless charges have been paid in full.

Charges Subject to Change—All charges listed in this announcement are subject to change at the beginning of any session.

Residence Facilities

Residence Halls—Dormitories for men and women (there are no accommodations for married couples) are located on the Uptown Campus. Rates for the year 1958-1959 are as follows:

	<i>Session rates (excluding vacations)</i>		
	<i>Single</i>	<i>Double</i>	<i>Triple</i>
Women:			
Clark and Roper Halls	—	\$145	\$130
Mary Graydon Hall	—	\$145	\$130
Men:			
Hamilton House	\$190	\$145	—
Hughes and McDowell Halls	—	\$145	—
McCabe House	—	\$120	\$105

Students who cannot be assigned to dormitories on the campus because of room limitations may make arrangements for accommodations in University-approved housing in the vicinity at monthly rates which vary from those in effect for University dormitories.

Room Reservations—Applications for dormitory rooms should be addressed to the Director of Housing, Mary Graydon Hall, The American University, Washington 16, D. C., and accompanied by a room deposit fee of \$75.

Students who cancel room reservations prior to August 1 (if the reservation is for fall

occupancy) or prior to December 15 (if the reservation is for spring occupancy) will be entitled to a refund of \$50.

A student who has made the \$75 deposit and who occupies the room reserved will be credited with \$50 on his bill for the first session attended. The remaining \$25 of the room deposit will be held over from session to session as long as he continues in residence. Within 30 days after graduation or after approved withdrawal from the University the \$25 will be refunded, less any unpaid obligations.

Occupancy—Students in residence may move into University dormitories by checking with the Housing Office, Mary Graydon Hall. For more detailed information see current session bulletin.

Students may not remain in University dormitories during the Christmas and Spring vacations without permission of the Office of Student Personnel. A charge will be made for occupancy during these periods at the rate of \$2 a night, the total charge during any single vacation period not to exceed \$12.

Students in residence in dormitories must observe all University regulations and will be held responsible for any damage done to rooms during their periods of occupancy.

Equipment—Each room in University dormitories is furnished with a bed, chest-desk, chair, and lamp, and there is ample closet space for each student. Electrical equipment brought by the student must be limited to small appliances such as clocks, radios, and small fans. In each dormitory there is a coin-operated washer and dryer for the convenience of students. The University Supply Store provides a linen rental service at the rate of \$12 a session. Resident students are urged to make use of this service to avoid laundry delays. Maids clean all rooms thoroughly once a week and students are expected to maintain their own rooms all other times. There are no housekeeping facilities in the residence halls and cooking is not permitted.

Meals—Meals are available in the University cafeteria in Mary Graydon Hall. Optional meal contracts are available which entitle students to breakfast, lunch, and dinner beginning on the first day of classes in the session and ending on the last day of examinations (excluding vacations). The charge for a five-day contract (Monday through Friday) is \$195 a session and the charge for a seven-day contract (excluding the Sunday evening meal) is \$250 a session.

Refunds—Refunds for meal tickets in cases of approved withdrawal will be prorated on a weekly basis. Charges for dormitory rooms are not refundable.



Scholarships and Loans

SCHOLARSHIPS

Each year the University offers a limited number of scholarships to full-time students. To qualify for consideration the applicant must (1) have clear admission status, (2) have maintained the equivalent of a B average or better (3) rank in the top quarter of his class, and (4) give evidence of financial need. In general, scholarships are awarded to applicants whose records give promise of distinguished academic performance, good citizenship, and acceptable educational objectives, and are open to students in all of the schools and colleges of the University (except the Washington College of Law which has its own special funds). Inquiries and application forms should be directed to The Office of Admission, The American University, Massachusetts and Nebraska Avenues, N.W., Washington 16, D. C.

General University Scholarships

Fifteen General University Scholarships ranging from \$1200 to \$2800 are available, the stipends of which are awarded at the rate of \$300 to \$700 a year. These scholarships, assuming superior academic achievement on the part of the recipients, are renewable for a period not to exceed four years of undergraduate study.

National Methodist Scholarships

National Methodist Scholarships are granted upon recommendation of the University by the Board of Education of The Methodist Church. These scholarships carry an annual stipend of \$500 and may not be held for more than two years. Applicants must have been members of The Methodist Church for at least one year, must have demonstrated an active interest in the work of the Church, must have an outstanding academic record (upper 5% of high school graduating class), and must have financial need. The family income cannot be more than \$6000 a year. The University Chaplain serves as the Methodist Scholarship officer.

Meyer Foundation Scholarships

These scholarships are available to sons and daughters of career employees of municipal, state, or federal government (including armed service personnel), and are renewable for a period not to exceed four years of undergraduate study. Stipends may be awarded up to full tuition.

Mary Graydon Scholarships

Ten Mary Graydon Scholarships are available in the amount of \$500 each year—with preference given to graduating seniors of Greater Metropolitan Washington Area high schools. These scholarships are renewable for a period not to exceed four years of undergraduate study.

Reynolds Fellowships

These fellowships are primarily for graduate students pursuing programs of advanced study for the purpose of entering some phase of mission work. Stipends up to \$1500 a year may be granted from this fund.

Cokesbury Graduate Awards for College Teaching

The Board of Education of the Methodist Church makes available a limited number of awards for outstanding graduate students who expect to go into college teaching or administration. Applicants must have been members of The Methodist Church for a minimum of three years and are judged on the basis of scholarship, leadership, churchmanship, character, need, and promise of usefulness in higher education. Stipends range from \$500-\$2500.

Graduate Assistantships

Graduate assistantships are awarded through the instructional departments. These carry 12 semester hours of free tuition each semester and an annual cash stipend of \$400.

Transfer Student Eligibility

Transfer students are not eligible for scholarships during their first year at the University, but are eligible for consideration the second year if their academic record meets required standards.

Student Loans

Student loan funds assist full-time students meet financial obligations and emergency needs. The amounts which may be borrowed and the interest rates which are charged are defined by the terms of the trust funds utilized. Promissory notes cosigned by a responsible person are required. Applications for student loans are placed with the Dean of Students in the Office of Student Personnel in Mary Graydon Hall. No loans are made to students during the first semester of their attendance at the University.

OTHER SCHOLARSHIPS

Other scholarships and awards which have been established by organizations and friends of the University include:

Walter and Sarah Alexander Fund
S. Emma Baer Memorial Fund
Lucius C. Bennett Scholarship
Louis C. and Lucy J. Brown
Memorial Fund
Mary Louise Brown Guild Scholarship
Collier Alumni Scholarship
Grace Markel Daish Scholarship
Charles H. and Ira Dean
Memorial Fund
Nancy Barnes-Devon Scholarship
Fund
Mary M. Dunham Scholarship Fund
Arabella Griffin Scholarship
Annie G. Hall Fund
G. E. Hammond Fund
Hutchins Alumni Scholarship
Hugh A. and Maggie Thompson Legg
Scholarship
Catherine Letts Scholarship Fund
Minnie Letts Scholarship Fund
Belva A. Lockwood Memorial
Scholarship

John H. and Nannie C. Lucas
Scholarship Fund
Massey Fund Fellowships
Charles A. Norwood Memorial
Scholarship Fund
Dorothy T. Opdyke Memorial
Scholarship Fund
Carrie S. Oves Scholarship Fund
Panhellenic Association of Washington
Scholarship
William W. and Eliza S. Ramsay
Memorial Fund
George W. Townsend Memorial
Scholarship Fund
Women's Accounting Society
Scholarship
Women's Advertising Club
Scholarship
The American University Women's
Guild Scholarship
Zonta Club of Washington
Scholarship



Curricula and Degrees

Undergraduate and graduate degrees are awarded by all of the schools and colleges of the University, except in the Washington College of Law where the curriculum is organized to meet the requirement of the degree of Bachelor of Law. Students interested in programs of study in Business Administration, Government and Public Administration, International Service, or Law are directed to the bulletins of the schools of The American University representing these areas. These bulletins may be requested through the Director of Admissions, The American University, Washington 16, D. C.

The College of Arts and Sciences offers the following degrees: the Associate in Arts, the Bachelor of Arts, the Bachelor of Science, the Master of Arts, the Master of Education, the Master of Science, the Master of Science in Science Teaching, and, through the Graduate School, the Doctor of Philosophy and the Doctor of Education. In addition to University requirements the student must satisfy the requirements of the department in which he specializes and earn the number of credit hours stated for the degree for which he is a candidate.

Undergraduate Programs

University Requirements for Undergraduate Degrees

All undergraduate students who are candidates for degrees must earn a required number of hours' credit (38-43, depending upon the courses taken) in basic studies, humanities, natural science or mathematics, social science, and physical education (physical education required of full-time students only). These courses are a part of the general education program of the University and provide a

common core of instruction for all undergraduates regardless of the individual areas of academic specialization. These requirements, normally completed in the freshman and sophomore years, are as follows:

BASIC STUDIES 12-16 hours
(23.100, 23.101) English Composition (6); (29.100, 29.101) Backgrounds of Civilization (6); and (49.101, 49.102, 49.103, 49.104) Physical Education (4) [not required of part-time students].

The Basic Studies portion of the University requirements may be waived by successful completion of standardized examinations. Veterans are awarded one semester hour of credit in Physical Education for each six months of service up to a maximum of four credit hours.

NATURAL SCIENCES AND MATHEMATICS 8-9 hours
Elected from 8 semester hours of a laboratory science (9.210, 9.211) Biology; (15.110, 15.111) Chemistry; (27.110, 27.111) Geology; or (51.200, 51.201) Physics; or 9 semester hours from (51.100) The Science of Physics (3); (15.100) The Science of Chemistry (3); (9.100) Human Biology (3); and (27.105) Earth Science (3); and including not more than 3 semester hours of elementary mathematics.

SOCIAL SCIENCE 9 hours
Elected from (53.200) American Government: National (3); (65.201) Introduction to Anthropology (3); (19.201) Introduction to Economics (3); (33.200) Introduction to World Politics (3); (57.200) General Psychology (3); and (65.200) Introduction to Sociology (3).

HUMANITIES 9 hours
6 semester hours in one and 3 semester hours in another of the following: Art, Dramatic Arts, Literature (including advanced language study), Music, Philosophy, and Religion.

University requirements are established by the Faculty. The Undergraduate Council, which is made up of representatives from all of the schools and colleges of the University which offer undergraduate degrees, has special responsibility to constantly evaluate the general education program and to make recommendations to the Faculty as needed.

Academic counseling, including guidance in the pattern of meeting University requirements by individual students, is directed by the deans of the several schools and colleges. The Associate Dean for General Education in the College of Arts and Sciences, in cooperation with the deans of these schools and colleges, coordinates the general education program, works on the scheduling of these courses, and formally certifies clearance of University requirements for graduation purposes.

Associate in Arts Degree

Many high school graduates who do not or for some reason cannot remain in college for four years desire to complete a two-year program. This fact, along with the development of the junior college, has contributed to the popularity of the two-year Associate in Arts curriculum.

The College offers this degree in general education under the guidance of a

departmental advisor. University requirements must be met, a unified program of study followed, and a minimum of sixty-three semester hours of credit completed.

Some departments offer an Associate in Arts with a major in a field of specialization. This requires the successful completion of University requirements, a minimum of eighteen semester hours in the major, and electives to complete a minimum of sixty-three semester hours of credit.

Bachelor's Degrees

The Bachelor of Arts or Bachelor of Science degree is awarded after completion of a minimum of 126 semester hours of credit including the University requirements and a program of major studies approved by one of the academic departments. Specific bachelor's degree requirements for each department are outlined under "Courses of Study."

Bachelor's degree programs are offered in the following fields:

BACHELOR OF ARTS:

Major Fields of Study

Division of Humanities

Art:

Art History
Painting
Sculpture

English

Foreign Language:

French
German
Spanish

Inter-departmental Humanities Major

Music:

Applied Music
Performance Major
Music History and Literature
Music Education
Music Theory

Philosophy and Religion:

Philosophy
Religion
Religious Education

Speech and Drama

Division of Natural Sciences and Mathematics

Mathematics

Statistics

Division of Social Sciences

Economics

History

Inter-departmental Social Science Major

International Relations

Political Science

Psychology

Sociology

Division of Education and Communication

Education:

Elementary Education
Nursing Education (R.N.
Prerequisite)

Communication:

Broadcasting
Journalism
Public Relations
Theatre-Radio-Television

Physical Education

BACHELOR OF SCIENCE:

Division of Natural Sciences and Mathematics

Biology

Distributed Science

Chemistry

Physics

Geology

Inter-departmental Studies

Inter-departmental degree programs permitting considerable flexibility have been developed within the divisions of the College. These curricula make it possible for a student to integrate course work in several departments toward the achievement of his educational objective. In the communicative arts an undergraduate degree may be earned with a performance major combining studies in Radio, Television, and Theatre. Specific requirements for this degree are stated in the listing of courses.

The Master of Science degree in Science Teaching reflects a similar inter-departmental approach.

Inter-Institutional Engineering Programs

The American University offers most of the studies normally required in the first two or three years of engineering. Under an agreement with the Virginia Polytechnic Institute, a properly qualified student who has satisfactorily completed a prescribed two-year curriculum may transfer to the third year in their program. Under an agreement with Duke University, a student who satisfactorily completes a three-year pre-engineering program at The American University may, by two years study at Duke, qualify for both the B.A. degree from The American University and an engineering degree from Duke. Other engineering schools also accept qualified American University students upon transfer.

Pre-Professional Programs

Pre-professional curricula are offered in pre-dentistry, pre-medicine, pre-law, pre-physical therapy, medical technology, pre-social work, and pre-theology. A student interested in one of these fields should consult the Dean upon arrival at the University and before his first registration for courses. An advisor representing the special field of interest will be assigned.

In physical therapy, where upper level courses are not offered at the University, it is expected that the student will transfer to a school having the required curriculum by the end of the sophomore year.

In the case of medical technology the work of the senior year is completed in a local medical laboratory and hospital.

Many pre-theological students are attracted to The American University. The presence of the Wesley Theological Seminary on the campus, along with the offerings of the Department of Philosophy and Religion and the religious activities under the direction of the University Chaplain, provide excellent conditions for pre-theological studies.

Combined Law Degree Program

Qualified students in the College of Arts and Sciences may enroll in a combined degree program leading to a Bachelor's degree in the College and a law degree in

the Washington College of Law, reducing the normal period of seven years to six years of approved study on a full-time basis or the equivalent in part-time study.

In this program a student who has completed a minimum of 96 credit hours toward his degree in the College of Arts and Sciences, and who meets the admission requirements of the Washington College of Law, is permitted to complete his undergraduate degree requirements with the first year of full-time study in law school.

Under this combined degree program, students pay the usual undergraduate tuition during their first year of law school and receive the undergraduate degree at the end of that year if they have met all requirements and have maintained a satisfactory average in their law studies. Any interested student should consult the Dean early in his undergraduate program in order to make sure that his preparation and courses of study will satisfy the requirements for both the undergraduate and the law degrees.

Graduate Programs

Master's Degrees

The degree of Master of Arts may be earned in the College of Arts and Sciences in the fields of Anthropology, Art, Communication (including Journalism, Radio and Television), Economics, Economic History, Education, English, Guidance and Counseling, History, Mathematics, Music, Philosophy (beginning in 1959-60), Psychology, Sociology, and Statistics. The Master of Science degree is offered in Biology, Chemistry, Geology, and Science Teaching.

For information on Masters' degrees especially designed for teachers the student is referred to the Chairman of the Division of Natural Science and Mathematics in connection with the Master of Science in Science Teaching and to the Chairman of the Department of Education for the Master of Education (to be offered beginning July 1, 1959).

For information on Master's degrees in other fields the student is referred to the bulletins of the other schools of the University.

To qualify for the degree of Master of Arts or Master of Science the candidate must (1) complete with a grade of B or better a minimum of thirty hours of graduate credit, of which twenty-four hours must be taken at The American University and up to six hours of which may be taken as a thesis research seminar or case study, (2) pass comprehensive examinations in three fields of study (two for degrees in Chemistry or Geology), and (3) present a thesis or its equivalent acceptable to an examining committee in the department of specialization.

Candidates for the Master of Arts degree in English and the Master of Science degree in Chemistry or Biology must pass proficiency examinations in a foreign language under the direction of the University Language Examiner.

Doctor's Degrees

Doctor's degree programs are offered under the direction of the Graduate School (See *Graduate School Bulletin*) for students of the College of Arts and Sciences, the School of Business Administration, the School of Government and Public Administration, and the School of International Service.

The Doctor of Philosophy degree may be earned through the College of Arts and Sciences in the fields of Economics, Economic History, History, Mathematics, Psychology, Sociology, and Statistics. The Doctor of Education degree may be earned in the Department of Education.

Information on admission to doctoral studies, degree requirements, advancement to candidacy, comprehensive examinations, and dissertations may be found in the *Graduate School Bulletin*.

Professional Certificates in Education

The Department of Education offers Professional Certificates in Elementary Education, Secondary Education, School Administration, and the Work of the School Psychologist (The Psychologist Certificate requires the concurrence of the Department of Psychology).

Students who desire these certificates are required to follow a program of courses appropriate to the particular certificate in question. A minimum of 30 credit hours beyond the Masters Degree must be completed with grades of B or better. These certificates are issued once each year at Commencement time.

Three-Year Master's Program

Increasingly the Master's degree is becoming a prerequisite to professional positions in many fields. To facilitate the undergraduate student's progress toward the Master's degree, the University provides an integrated course of study beginning with the junior year and leading to the degree of Master of Arts or Master of Science. A student enrolled in this program may—

1. Tentatively select in his junior year the field for his Master's comprehensive examinations and arrange his electives accordingly.
2. Apply toward his course requirements for the Master's degree any credits earned in graduate level courses taken during the senior year which are in excess of hours needed for the Bachelor's degree.
3. Be advanced to candidacy for the Master's degree upon entering his year of graduate study, if he achieves an average of B or better in his major field.
4. Be in a position to include a broad program of research in his graduate study and to complete all of the work for the degree in one year.

Besides its attractiveness to those who take all their undergraduate study at The American University this program holds special interest for junior college graduates, since it is possible for them to complete both the Bachelor's and Master's degree programs in three years of study.

Part-Time Education at The American University

Many of the students in the College of Arts and Sciences work and go to school part-time. Employment opportunities in Washington are excellent and great emphasis is placed on education by employers. The College of Arts and Sciences facilitates the education of part-time students by offering sections of most classes both day and evening and by offering full programs of evening classes on both the Uptown Campus and at the Downtown Center, 19th and F Streets N.W., which is convenient to the major centers of government employment. Most evening classes meet once a week for a two hour and twenty minute period. It is possible through evening classes to complete the requirements for the Associate, Bachelor's or Master's degrees in most major fields of study.

The American Language Center

Non-English speaking foreign students are urged to enroll in the Language Center of the University, which provides opportunity for intensive study of the English language at beginning, intermediate, and advanced levels. Students may enter at the beginning of any six-week term during the year. For further details see the special bulletin of the Center.



Counseling

Counseling is one of the important relationships through which students and faculty work together in the achievement of educational goals. This function receives close attention in the work of the University.

Personal and Social Counseling. The Dean of Students and Associate Dean of Students, the Residence Counselors and organizational advisors, and a corps of other advisors coordinate their work through the Office of Student Personnel. Their basic concern is to assist with personal and social adjustment and to help the student derive educational value from his extra-curricular activities. The Office of Student Personnel is the center to which students may turn with questions which are non-academic in character.

Freshman Counseling. The Associate Dean for General Education in the College of Arts and Sciences works with the deans of the various schools and colleges in the administration of the freshman counseling system. Incoming freshmen are assigned in small numbers to specific faculty members for guidance in their academic programs. These students remain with these advisors through their first two years or until after the declaration of a major, when they may be assigned to an advisor in one of the instructional departments.

Departmental Counseling. The chairmen of the departments of instruction direct the academic counseling of those who are specializing in their respective fields.

Students are encouraged to select majors as early as possible in their college careers so that advisors from the area of proposed specialization may be assigned. A major field of study must be declared by the beginning of the junior year or, in the case of the part-time student, upon the completion of 63 credit hours of undergraduate work.

Foreign Student Advisor. The Foreign Student Advisor maintains an office both on the Campus and at the Downtown Center. He assists foreign students with their special problems and represents their interests in the program of the University.

Student Responsibility. The function of counselors is to attempt to help individuals help themselves. It is assumed that the student finally is responsible for the planning and pursuit of his own educational program.

Vocational Guidance and Placement Center

The University maintains a Vocational Guidance and Placement Center which has a twofold purpose: to assist students determine their fields of individual competence, vocationally and professionally, and to help both students and alumni with job placement. Those interested in these services are urged to register at the Center.

Another important function of this office is to assist students presently enrolled in the University in finding part-time employment on the campus or in the Washington area. Many students earn part of their college expenses this way.

Academic Information

Academic Load

Full-time Students. A full-time undergraduate student may register for 12 to 18 credit hours during the fall or spring sessions. Programs in excess of 18 credit hours may be approved at the discretion of the Dean for students whose cumulative grade average is B or above.

A full-time graduate student may register for no more than 15 hours credit in any fall or spring session.

Part-time Students. A part-time student may register for no more than 10 credit hours in any fall or spring session if an undergraduate or for no more than 6 credit hours if a graduate.

Summer Sessions. A full-time undergraduate student may register for 6 credit hours in either half of the summer session. With the approval of the advisor one additional 3 credit hour inter-session course may be taken. Part-time students are limited to 4 credit hours for either half of the summer session.

Employment. A student employed in outside work for more than 20 hours a week must register as a part-time student.

Late Registration

The Dean may approve the registration of full-time undergraduate students as late as the end of the first week of classes if the petitioner (1) has been enrolled previously in the University, (2) can show satisfactory cause for the delay, and (3) is in good standing. After the second full week of classes students may register as auditors only with the permission of instructors and the Dean.

Master's degree candidates must request permission for late registration from the Dean of the College of Arts and Sciences, Doctor's degree candidates from the Dean of the Graduate School, and non-degree students from the Office of the Division of General and Special Studies.

Change of Status

Transfer from *course to course* or from one section of a class to another is not permitted after the second full week of classes.

Change from *audit to credit* may be made at the student's request before the end of the second week of classes. Thereafter such changes may be approved by the Dean of the College or the Dean of the Graduate School, as the case may require, for valid reason and upon the recommendation of the instructor and the advisor. Such petitions, however, will not be granted during the last month of classes in any session.

Change from *credit to audit* may be made during the first four weeks of the session upon the student's request unless the student (1) is on probation or (2) is a veteran studying at government expense. Thereafter such changes may be made only with the recommendation of the advisor and with the approval of the instructor and dean.

Official withdrawal from one or more classes or from a full program will be approved during the first two weeks of the session at the student's request. Thereafter requests for official withdrawal will be approved only for reasons such as illness, necessity for leaving the city, changes in hours of employment (in case of part-time students), or such similar causes beyond the student's control, and provided he is doing passing work in the course or courses at the time of withdrawal. In the case of first-year students, withdrawal from one course of a full-time program may be approved at mid-term by the Dean upon the recommendation of the advisor if it is felt that this is in the interest of the student's progress toward his educational objective.

Grading System

Grade definitions are as follows: A (3 points), Excellent; B (2 points), Good; C (1 point), Fair; D (0 points), Poor; F (minus one point), Failure; I, Incomplete (for reasons beyond student's control); W, Official Withdrawal; and X, Unofficial Withdrawal.

Academic averages are computed by dividing the number of quality points earned by the number of credit hours attempted.

A grade of Incomplete (I) may be given when for some reason beyond the student's control course requirements are not met and will be accepted by the Registrar only if accompanied by a statement from the instructor indicating what must be done to complete the work of the course. Incomplete grades must be removed by March 1 for the fall session, July 15 for the spring session, and October 15 for the summer sessions. Students who do not remove incomplete grades prior to these dates will receive a permanent grade of F or X.

Absences

The University requires class attendance of undergraduates but makes the attendance of graduate students voluntary. Undergraduates who miss more than one-fourth of the meetings of any class without satisfactory excuse may not take the final examination or receive credit for the course.

Veterans and other students studying at government expense are subject to the loss of educational benefits for excessive absences.

Official explanation of absence forms are issued from the Office of Student Personnel or, where illness is involved, from the University Infirmary. This form

may also be filled out by any officer of the University for absences caused by an activity for which the officer is responsible. The completed explanation of absence form may be shown to the instructor and must be deposited by the student in the Registrar's Office.

An explanation of absence in no way excuses the student from responsibility for any of the requirements of the course or courses for which he is registered. All back work must be made up in consultation with the instructor.

Academic Probation

A freshman who fails to achieve a 1.00 index (C average) during his first two semesters (24-30 hours), but whose cumulative index is .750 or above, may be placed on academic probation for his second year. He is subject to dismissal if he fails to achieve a cumulative index of 1.00 by the completion of the second year of college study.

Academic Dismissal

Undergraduate students are subject to academic dismissal under the following conditions:

1. If a cumulative index of 1.00 is not achieved by a freshman during the first two semesters (30 hours credit for part-time students) of full-time study.
2. If a cumulative index of 1.00 is not achieved when 63 credit hours (including credits by transfer) have been attempted.
3. If a cumulative index of 1.00 is not achieved when 93 credit hours (including credits by transfer) have been attempted.
4. If the session index falls below .000 for any semester for which the student is registered.

A transfer student admitted with advanced standing of 30 hours or less is subject to dismissal if he fails to achieve a 1.00 index in the work undertaken at the University by the time his transfer and resident credit total 63 hours.

The performance of graduate students is checked regularly and those not demonstrating satisfactory progress toward their degree objectives may be dismissed at the discretion of the departments and the Dean.

A student dismissed from the University for academic reasons may not apply for re-admission until a full calendar year has elapsed.

Residence Requirements

The last 30 hours of course work for any degree must be done in residence, except in the case of the Master's degree, for which 6 of the total hours required may be transferred from another institution with the approval of the department of specialization.

Veterans and Physical Education

Veterans with 24 months of military service are exempt from the Physical Education requirement for an undergraduate degree and may receive 1 hour of credit for each 6 months of service up to a 4-hour maximum. This credit is validated through the Admissions Office upon presentation of a record of service experience such as a certificate of honorable discharge or a certified statement of duty performed.

Regulations Subject to Change

The University reserves the right to change the regulations stated in this or other published materials, or to cancel or change the course offerings and schedules given in this announcement at any time without notice.



Student Activities

The academic program is complemented by a wide range of extra-curricular activities and organizations which enrich the experience of the student and, in many instances, provide significant opportunity for the development of leadership qualities and for experimentation in democratic processes. Through the Office of Student Personnel this important part of student life is related integrally to the educational objectives of the University.

The Student Association

The Student Association is an organization of all the full-time undergraduates enrolled in all of the schools and colleges of the University. Part-time students may also belong by paying an activity fee in addition to the regular tuition charge. The Student Association annually elects officers and through the College Council, an elected executive body, co-ordinates the activities of the many religious, social, academic, and honorary organizations. Residence councils assume an important role in residence hall administration, and a Student Judiciary makes disciplinary recommendations on all infractions of University regulations. The nine social fraternities and sororities on campus are under the direction of the Inter-Fraternity or the Panhellenic Councils and the Dean of Students.

Departmental Organizations

Many academic departments sponsor clubs and activities related to the subject matter areas which they represent. These include the American University Players, the Chemistry Club, the American University Chorus, the American University Orchestra, Der Deutsche Verein, the Economics Club, the Forensic Society, the Student National Education Association, the History Club, the International Relations Club, the Junior Alliance Française, the Music Club, Pan Athnon (International Relations), the Pan American Club, the Philosophy Club, the Political Club, the Pre-Med Club, Radio Station WAMU, the Society for the Advancement of Management, and the Sociological Society.

Students are encouraged to belong to these organizations to deepen their interests in the areas of specialization and to find an informal forum for the exchange of ideas.

Professional Fraternities

Membership in professional fraternities is one of the privileges open to students who share common professional objectives. These organizations are national in scope with local chapters constituted under the authority of the Student Association. The following professional groups are represented on the campus: Alpha Eta Rho (International Aeronautical Fraternity), Delta Phi Alpha (German), Delta Sigma Rho (Debate), Kappa Delta Epsilon (Education—women), Kappa Phi Kappa (Education—men), Pi Delta Epsilon (Radio and Journalism), and Sigma Delta Chi (Professional Journalism).

Honorary Organizations

One of the most coveted distinctions of college life, usually associated with the junior and senior years, is that of election to one of the honor societies. These societies recognize outstanding achievement in the fields of academic performance and leadership. Membership is necessarily limited because of the high standards characteristic of these organizations.

The honor societies at the University include Alpha Psi Omega (Dramatics), Beta Beta Beta (Biology), Cap and Gown (Leadership and Scholarship—women), Chi Psi Omega (Graduate men), Omricon Delta Kappa (Leadership and Scholarship—men), Phi Alpha Theta (History), Phi Delta Gamma (Graduate women), Pi Gamma Mu (Social Science), Pi Sigma Alpha (Political Science), Psi Chi (psychology), Theta Sigma Phi (Journalism—women), and the University Honor Society (Scholastic).

Other Student Organizations and Activities

In addition to the above groups with specialized academic relationships there is a wide range of other organizations and activities—religious, social, athletic, and recreational. The cultural life of the campus is enriched through regular chapels and convocations, concerts and recitals, theatre productions, and numerous events which bring distinguished persons to the University community.

Eligibility Rule for Student Office

A student is required to have a minimum cumulative C grade average to be a candidate for or to hold a major office in any organization of the Student Association.



Courses of Instruction

The following pages describe by divisions the offerings of the departments of the College of Arts and Sciences. Session bulletins are published three times annually (Fall, Spring, and Summer), and these should be used for registration purposes. The University reserves the right to cancel or change any course listings in this bulletin or any other published announcement at any time.

Course Numbering System

The arabic numeral in parentheses following the course title indicates the semester credit hours earned for successful completion of the course.

Each course is identified by a decimal number. The number to the left of the decimal (3-69) identifies the department in which the course is offered. The series of three numbers to the right of the decimal indicates the level of the course. Courses numbered .001-.099 carry no credit. Courses numbered .100-.499 are for undergraduate students. Courses numbered .500-.599 are for graduate and advanced undergraduate students. Courses numbered .600-.799 are for graduate students only.

Honors Work

The Division of Humanities and the Division of Natural Science and Mathematics offer an honors program for superior students capable of individual

study and research. This work may be planned as either reading or research projects. The minimum requirements for admission to the honors program are (1) the completion of 89 credit hours including 9 credit hours in the department in which the work is to be done and (2) an overall cumulative 1.75 average. Individual departments may establish higher minimum standards. This program is available only to a restricted number of qualified applicants. For further information the student is referred to the chairman of the department in which he desires to pursue this program.

Reading and Research Courses

In addition to the courses listed below, undergraduate and graduate students may register for specialized reading and research courses for which they are qualified and which are appropriate to their programs.

Undergraduate Reading and Research Courses. An undergraduate student who wishes to enroll in these courses must be recommended by his major department, must have pursued the background courses essential to successful study of the proposed project, and must have completed 63 semester hours of college work, at least 6 of them in this University, with a cumulative academic index of 1.5 or better. Properly qualified undergraduate students may earn a maximum of 12 credit hours by independent study and may not register for more than two independent study courses during any session. Registrations will be accepted only during regular registration periods. Each course must be completed within a single session.

Graduate Reading and Research Courses. A graduate student recommended by his department is eligible to register for a reading course after the completion of at least 6 hours of approved graduate work in residence with an average of B or better, or for an independent research project (not for thesis purposes) after the completion of at least 12 hours of approved graduate work in residence with an average grade of B or better. No graduate student may apply more than 6 hours of work in a reading course, independent research course, in-service project or institute, or more than 9 hours in any combination of these courses, toward meeting the course hour requirements for the master's degree. No more than 9 hours in one of these types of courses or more than 18 hours in any combination of them may be applied toward meeting the course hour requirements for the doctor's degree. Graduate reading courses must be completed in no more than two consecutive sessions of work and research projects must be completed within one calendar year after registration.

Registration for Reading and Research Courses. Students permitted to enroll in the independent study courses listed below should enter on their registration cards the indicator number (3-69) of the department which will supervise their work, followed by the number of the particular course to which they are being admitted, as indicated below.

UNDERGRADUATE COURSES

- .390 Individual Study Project (3)
- .490 Individual Research Project (3)

GRADUATE COURSES

- .099 Graduate Study (No credit). For graduate students who have completed work and thesis seminar for an advanced degree and who wish to continue on the rolls of the University to complete their thesis, case studies, or other requirements.
- .590 Reading Project (3)
- .690 Research Project (3)



DIVISION OF HUMANITIES

Art

Drama

English

Languages

Music

Philosophy

Religion

Speech



Art

Professor: ANDREW S. KECK. *Associate Professors:* SARAH BAKER; ROBERT F. GATES; BEN L. SUMMERFORD (Chairman). *Assistant Professor:* LOTHAR BRABANSKI. *Adjunct Professors:* MARGARET BOUTON; HUBERT LECKIE. *Lecturers:* JAMES CAHILL; LYN EGBERT; HELENE MCKINSEY; PRENTISS TAYLOR.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Arts.

University Requirements38-43 hours

Departmental Requirements:

ASSOCIATE IN ARTS

Major courses 18 hours

BACHELOR OF ARTS

Major courses34-42 hours

Students majoring in painting or sculpture complete 30 hours of studio courses and 6 hours of art history (7.100 and 7.101 *Survey of Art I and II*). Students preparing to teach art complete 24 hours of studio courses and 5.370 and 5.371 *Laboratory Workshop for Art Teachers I and II* (6) plus 6 hours in art history. Students majoring in art history complete 30 hours of art history including 7.100 and 7.101 *Survey of Art I and II* (6) plus 4 hours in creative painting or sculpture or drawing. Students majoring in design complete 18 hours in studio art courses, 6 hours in art history, and 18 hours in the field of design including 5.350 and 5.351 *Design Fundamentals I and II* (6) and 5.352 and 5.353 *Lettering and Calligraphy I and II* (6).

Related courses12-27 hours

Students are advised to take courses in the humanities and related fields. Students planning to teach art in the secondary schools select 18 hours from the following courses in Education: 21.100 Introduction to Education (3); 21.310 History of Education in American Culture (3); 21.320 Psychology of Education (3); 21.340 The Secondary School Curriculum (4); 21.342 and 21.343 Methods of Teaching in Secondary Schools 1 and 2 (6); 21.440 and 21.441 Principles of Education (6) and observation and student teaching (4). Students majoring in design are required to complete 51.168 Engineering Drawing I (2); 17.532 and 17.533 Graphic Arts and Graphic Arts Advanced (6); other electives selected from fields of Business, Psychology, Communications and Humanities.

Tool courses 6 hours

First year French, German or Spanish required for majors in art and art history.

Electives:

ASSOCIATE IN ARTSto complete 63 hours

BACHELOR OF ARTSto complete 126 hours

GRADUATE DEGREE—Master of Arts

Course Requirements: Minimum of 30 hours of approved graduate work including 6-12 hours in 5.792 Art Laboratory Painting; 5.793 Art Laboratory Sculpture; 5.799 Thesis Seminar in Art (3-6); 5.560 Drawing (3); 5.533 Materials and Techniques of Painting (3); 6 hours in Art History; and 6 hours in elective field.

Written Comprehensive Examinations: 3, including one in theory and techniques of painting or sculpture, one in art history and one chosen from another field of the humanities or from a field of the social sciences.

Thesis: Execution of an original work or works of art defended by written critical analysis of problem undertaken.

UNDERGRADUATE COURSES

Art

- 5.104 Art in Everyday Living (3)** Appreciation of the arts in terms of their application to everyday living. Approached through analysis and practical application of basic principles of design and good taste.
- 5.130 Oil Painting I (1)** Basic problems of figure and still life painting. Emphasis on color and design. Primarily for amateurs and students other than art majors. May be repeated for credit. Fee, all students, \$5.
- 5.131 Oil Painting II (1)** Continuation of 5.130. Fee, all students, \$5.
- 5.160 Sketch Class I (1)** Life drawing with emphasis on rapid sketch. May be repeated for credit. Fee, all students, \$5.
- 5.161 Sketch Class II (1)** Continuation of 5.160. Fee, all students, \$5.
- 5.306 Interrelation of the Arts (3)** Study of the varieties and channels of relationship among major arts (painting, sculpture, literature, architecture and music) as exemplified in France between 1855-1905. Students will be asked to do individual research-and-report projects.
- 5.320 Creative Painting I (2-3)** Fundamentals of painting. Comprehensive consideration of color, composition and drawing from still life and the figure and in individually assigned projects. May be repeated for credit. Student registers in elementary section in first year, intermediate section second year, advanced section in third and fourth years. Fee, all students, \$5 per credit hour.
- 5.321 Creative Painting II (2-3)** Continuation of 5.320. Fee, all students, \$5 per credit hour.
- 5.340 Sculpture I (2-3)** Problems and principles of sculpture. Acquaintanceship with tools, techniques, materials for plastic expression. May be repeated for credit. Fee, all students, \$5 per credit hour.
- 5.341 Sculpture II (2-3)** Continuation of 5.340. Fee, all students \$5 per credit hour.
- 5.350 Design Fundamentals I (3)** Theory and techniques of design, applicable to all problems of visual presentation; layout, display, graphics, etc.
- 5.351 Design Fundamentals II (3)** Continuation of 5.350.
- 5.352 Lettering and Calligraphy I (3)** Theory and analysis of letter forms including practice and execution of them; history and practice of calligraphy.
- 5.353 Lettering and Calligraphy II (3)** Continuation of 5.352.
- 5.360 Drawing I (3)** Structural drawing from the human figure and head. Anatomy, movement, expression. Course covers range of techniques and mediums. May be repeated for credit. Fee, all students, \$15.
- 5.361 Drawing II (3)** Continuation of 5.360. Fee, all students, \$15.
- 5.370 Laboratory Workshop for Art Teachers I (3)** Crafts used in teaching such as simple pottery, silk screen, linoleum block, fabric design, etc., as well as theory of teaching art on secondary school level. *Prerequisite*, 12 hours studio work or permission. Fee, all students, \$15.
- 5.371 Laboratory Workshop for Art Teachers II (3)** Continuation of 5.370. Fee, all students, \$15.
- 5.380 Teaching Art in Elementary Schools (3)** Methods and techniques of teaching art as part of regular elementary school instruction.

Art History

- 7.100 Survey of Art I: Ancient and Medieval (3)** Illustrated historical introduction to architecture, sculpture, painting with art presented as an objectification and record of man's major beliefs and ideas. Field trips in Washington.
- 7.101 Survey of Art II: Renaissance and Modern (3)** Illustrated historical introduction to architecture, sculpture, painting in Western World between 1500 and 1950. Attention to selected original works in Washington.
- 7.300 Ancient Art (3)** Ancient Mediterranean civilizations studied through the language of the visual arts with emphasis on the cultural achievements of classical Greece.
- 7.301 Mediterranean Medieval Art (3)** Early Christian in Italy; Byzantine in the Near East; Romanesque and Gothic in Italy (Duccio, Giotto).

- 7.302 North European Medieval Art (3)** Art from the early Christian period through Romanesque and Gothic to 1400 (manuscript illuminations and French cathedrals: sculpture, stained glass).
- 7.303 Northern Renaissance Art (3)** Visual arts of North Europe from 1400 to 1700 with stress on painting (Van Eyck, Bosch, Breughel, Rubens, Rembrandt, Poussin).
- 7.304 Renaissance Architecture (3)** Renaissance, Mannerist and Baroque architecture in Italy and spread of styles to North Europe before 1750.
- 7.305 Modern Architecture (3)** Development of architecture in Europe and the United States from 1700 to the present day.
- 7.307 Oriental Art (3)** Arts and culture of the Far East as reflecting the great civilizations of the Orient.

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

Art

- 5.560 Drawing I (3)** Experiments in the creative, emotional quality of drawing. Development of a personal creative expression. Fee, all students, \$15.
- 5.561 Drawing II (3)** Continuation of 5.560. Fee, all students, \$15.
- 5.533 Materials and Techniques of Painting (3)** Technical investigation of painting methods from Renaissance to present. Preparation of grounds, media, underpainting, glazing, emulsions for tempera, etc.
- 5.792 Art Laboratory—Painting (3-6)** Intensive investigation of ideas and techniques in painting. Emphasis on experimentation leading to development of significant style. *Prerequisite:* 24 hours of painting or equivalent. Fee, all students, \$5 per credit hour. Hours arranged with Department Chairman.
- 5.793 Art Laboratory—Sculpture (3-6)** Intensive investigation of sculpture with emphasis on experimentation leading to development of individual style. *Prerequisite:* 24 hours of sculpture or equivalent. Fee, all students, \$5 per credit hour. Hours arranged by Department Chairman.
- 5.799 Thesis Seminar in Art (3-6)**

Art History

- 7.500 Renaissance Painting (3)** Major works of Italian Renaissance, Mannerist, and Baroque painters and of El Greco and Velasquez with due attention to original works in the National Gallery.
- 7.501 Modern Painting (3)** Major works of European painters from 1700 to 1950. (Watteau to Matisse-Picasso).
- 7.506 Renaissance Sculpture (3)** Italian sculpture from 1400 to 1700 with stress on achievements of Donatello, Michelangelo, Bernini.
- 7.507 Modern Sculpture (3)** Changes in sculpture from 1700 to the present with stress on innovations of Rodin, Brancusi, Moore and the American abstractionists.
- 7.510 Painting in the United States I (3)** Critical examination of representative paintings from Colonial times to 1870.
- 7.511 Painting in United States II (3)** Critical examination of representative paintings from 1870 to the present.
- 7.700 Criticism of Painting I (3)** Intensive artistic analysis of selected masterpieces from the cave paintings to the Italian Renaissance.
- 7.701 Criticism of Painting II (3)** Intensive artistic analysis of selected masterpieces from Italian Renaissance to present day.

English

Professors: CHARLES M. CLARK (Chairman); MERRITT C. BATCHELDER (Director of Graduate Studies); ALVA L. DAVIS (Director, American Language Center). *Associate Professors:* RUDOLPH VON ABELE; MARY M. PATTON; LOUISE YOUNG. *Assistant Professors:* RAYMOND W. AIKEN; ARTHUR D. GOLBY (Director of English Composition). *Instructors:* MARY ANN HOOD; FRANCES KING; GEORGE LOVE, *Professional Lecturer:* ZOE WYTHE. *Lecturers:* JOHN CLENDENIN; KENNETH CROFT; JOHN DE CAMP; DARRELL DRUMMOND; GERALD ELBERS; THOMAS FOYE; HARRY FREEMAN; EDWIN GUNBERG; RALPH ROBIN.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Arts.

University Requirements

38-43 hours

Departmental Requirements:

ASSOCIATE IN ARTS

Major courses 18 hours
Including 6 hours of a survey course in English or American Literature.

BACHELOR OF ARTS

Major courses 30 hours
6 hours of a survey course in either English or American Literature and 24 hours of advanced courses in literature and writing as approved by the department. Students planning to teach should elect 6 credits in English language and linguistics.

Related courses 12 hours
Advanced work selected from the following fields, as approved by the department: Art, History, Music, Philosophy, Speech and Drama, French or German Literature.

Tool courses 6 hours
6 hours in a modern foreign language, preferably a second-year or advanced course. This requirement may be waived by examination or through presentation of evidence of equivalent achievement to the department.

GRADUATE DEGREE—Master of Arts

Course Requirements: Minimum of 30 hours of approved graduate work, 6 of which may be in 23.799 Thesis Seminar in English (3-6).

Written Comprehensive Examinations: 3, including one in English literary history, American literary history, or the English language; one in a selected period of English or American literature with special emphasis on a writer of the period; and one in a related field of literature, language, or other appropriate subject matter.

Thesis Requirement: Except for students majoring in English language and linguistics a thesis is required. Advanced seminars are required in areas where the thesis is waived.

Tool Requirement: Proficiency examination in a modern foreign language.

UNDERGRADUATE COURSES

- 23.100 English Composition I (3)** Study and practice in expository writing.
- 23.101 English Composition II (3)** Expository writing, including a research paper. *Prerequisite,* 23.100.
- 23.110 Introductory English for Foreign Students I (3)** English taught as a foreign language. Instructional method same as introductory modern foreign language courses.

- 23.111 Introductory English for Foreign Students II (3)** Course preparing students studying English as a foreign language to enter first year English courses. *Prerequisite, 23.110 or permission of instructor.*
- 23.120 World Literature I (3)** Introduction to literary forms and masterpieces of Western civilization from the ancient Greeks to the 18th century. Primarily for students not majoring in English.
- 23.121 World Literature II (3)** Introduction to literary forms and masterpieces of the 19th and 20th centuries in Europe and America. Primarily for students not majoring in English.
- 23.300 Advanced Composition (3)** For students who have completed English Composition (6) and wish continued training and practice in the skills of writing. Not open to English Majors.
- 23.303 Report Writing (3)** The writing of reports, memoranda, letters, administrative orders, and other forms of communication in government administration.
- 23.310 English Literature I (3)** Survey of English prose and poetry from the beginnings to the mid-18th century. *Prerequisite to advanced courses in English Literature.*
- 23.311 English Literature II (3)** Survey of English prose and poetry from the mid-18th century to the 20th century. *Prerequisite, 23.310.*
- 23.320 American Literature I (3)** A survey of American Literature from the colonial period to about 1860. *Prerequisite to advanced courses in American Literature.*
- 23.321 American Literature II (3)** A survey of American Literature from 1860 to the 20th century. *Prerequisite, 23.320.*
- 23.330 Introduction to the Short Story (3)** Development of the short story as a unique form. Reading and analysis of stories by 19th and 20th century writers.
- 23.331 Introduction to Poetry (3)** Study of poetic forms and techniques, using a non-historical approach. Reading and analysis of English and American poems.
- 23.333 Introduction to Literary Criticism (3)** The reading of selected critics, European and American: Aristotle, Dryden, Coleridge, Eliot, Richards, Ransom, Blackmur.

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

- 23.500 Principles of Linguistics (3)** Linguistic method, modern linguistic theory, problem of language structure, historical and comparative methods, dialect geography.
- 23.503 History of the English Language (3)** Development of the language from Old English to Modern English, with special studies on phonology, grammar, and vocabulary.
- 23.504 Modern American English (3)** Regional and social varieties of American English, with principle interest in dialect geography.
- 23.508 Teaching of English as a Foreign Language (3)** Methods of teaching English as a foreign language, application of modern linguistics research, development of teaching materials, observation of classes in the American Language Center.
- 23.510 Creative Writing I (3)** Training in writing prose and poetry through individual literary projects suited to the student's needs and interests. *Prerequisite, permission.*
- 23.511 Creative Writing II (3)** Style and structure in writing prose and poetry. Practice in writing essays, short stories, and poems. Readings, discussions, conferences. *Prerequisite, permission.*
- 23.512 Creative Writing Workshop (3)** A study in the creative process and guidance in the development of students as creative writers. Informal lectures, discussions and conferences.
- 23.520 Chaucer I (3)** Introduction to the reading of Chaucer's poetry. Chaucer as man and poet, and his 14th century background. Readings in *The Canterbury Tales*.

- 23.521 Chaucer II (3)** Readings in *The Canterbury Tales*, *Troilus and Criseyde*, and some of the minor poems. *Prerequisite*, 23.520.
- 23.522 English Drama: 10th Century to 1642 (3)** The development of English drama through the study of the plays of the predecessors and contemporaries of Shakespeare and the post-Elizabethan playwrights.
- 23.523 Renaissance Literature (3)** Literature of the Renaissance in Italy, France, England, exclusive of drama, with emphasis upon the literature of the Tudor period in England.
- 23.524 Shakespeare I (3)** The earlier plays, with attention to the development of Shakespeare's artistry, his use of sources, the social and political backgrounds.
- 23.525 Shakespeare II (3)** The later plays.
- 23.526 Seventeenth Century Literature (3)** Commonwealth and Restoration Literature, with some attention to continental literature of the century, exclusive of drama.
- 23.527 Milton (3)** Readings in the major and minor poems, with special attention to *Paradise Lost*. Some readings in his prose works.
- 23.528 Studies in 18th Century Literature (3)** Literature of 18th century England, with special reference to outstanding authors and dominant literary forms in the neoclassical tradition exclusive of drama and novels.
- 23.529 Johnson (3)** Johnson as a leading man of letters in the 18th century. Readings in *Life of Johnson* and in the work of some of Johnson's contemporaries.
- 23.530 Restoration and 18th Century Drama (3)** English drama from Dryden to Sheridan.
- 23.531 The English Novel I (3)** The English novel in the 18th century. Reading of selected novels by Defoe, Richardson, Fielding, Smollett, Sterne, and Walpole.
- 23.532 The English Novel II (3)** The English novel during the 19th century. Selected novels by Scott, Austen, Dickens, Thackeray, Eliot, and Hardy.
- 23.533 Romantic Literature I (3)** A study of English literature of the Romantic Movement, with emphasis on Blake, Burns, Wordsworth and Coleridge.
- 23.534 Romantic Literature II (3)** A study of the chief writings of Byron, Shelley, and Keats, along with their 19th century contemporaries.
- 23.535 Studies in Victorian Literature I (3)** The Victorian Age in English literature as reflected in non-fictional prose and poetry, 1830-1880.
- 23.536 Studies in Victorian Literature II (3)** The Victorian Age in English literature as reflected in non-fictional prose and poetry, 1830-1880.
- 23.537 Modern British Literature (3)** British literature from 1900 to the present, exclusive of drama. Emphasis on major writers.
- 23.538 Modern British Drama (3)** Dramatic literature of Britain from Shaw to the present.
- 23.540 Emerson and His Era (3)** Study of artistic and intellectual currents of the "American renaissance" as embodied in the writings of Emerson and his circle.
- 23.541 Howells and His Era (3)** The writings and influence of William Dean Howells, Mark Twain, and Henry James.
- 23.542 The Romantic Tradition (3)** A comparative study of 19th century American literature and English literature of the Romantic Movement.
- 23.543 The Realist Tradition (3)** A comparative study of late 19th century American literature and English literature as related to the rise of Realism and Naturalism.
- 23.544 The American Novel I (3)** Development of the novel 1830-1900, as exemplified in the writings of: Cooper, Hawthorne, Melville, James, Norris, Crane.
- 23.545 The American Novel II (3)** The development of the novel in the twentieth century through a reading of representative works by Dreiser, Hemingway, Faulkner, Fitzgerald, Dos Passos, Wolfe.
- 23.546 Poetry in America (3)** Major figures in American poetry, with special attention to the period since 1914.

- 23.547 Modern American Literature (3)** Literature since 1900, with special attention to the period since 1920.
- 23.548 Modern American Drama (3)** American drama since World War I.
- 23.550 Classical Drama (3)** A study of Greek and Roman tragedy and comedy, through the reading of selected works in translation.
- 23.552 Comparative Literature I (3)** Comparative study of the writings of European writers in the Romantic tradition: Rousseau, Goethe, Pushkin, Hugo, and others.
- 23.553 Comparative Literature II (3)** Comparative study of the writings of European writers of the late 19th century and 20th century: Nietzsche, Zola, Ibsen, Tolstoi, Hauptmann, Mann.
- 23.554 Contemporary European Literature (3)** Comparative study of modern European writers: Kafka, Rilke, Sartre, Camus, and others.
- 23.555 Modern European Fiction I (3)** A study of major 19th century novelists: Stendhal, Balzac, Flaubert, Dostoievski, Tolstoi, Turgenev.
- 23.556 Modern European Fiction II (3)** Selected readings of major 20th century novelists: Proust, Mann, Gide, Kafka, Joyce.
- 23.557 Modern European Drama (3)** Representative plays of European playwrights exclusive of the British Isles from Ibsen to the present.
- 23.563 Children's Literature (3)** Sources and uses of stories and related materials in the elementary grades. Methods of teaching literature to children.
- 23.564 Literature for Secondary Schools (3)** Materials and methods of teaching literature in secondary schools.
- 23.799 Thesis Seminar in English (3-6)** For graduates only.

Languages

Professors: ALVA L. DAVIS, Acting Chairman; JOHN G. FRANK, *Associate Professor:* RUBERTA M. OLDS. *Assistant Professor:* KATHRYN D. WYATT.

Degree Programs

UNDERGRADUATE DEGREE—Bachelor of Arts in French, German, or Spanish.

University Requirements

38-43 hours

Departmental Requirements—

Major courses 24-36 hours
12 hours of elementary and intermediate courses (toward which credits earned in secondary schools may be applied) and 24 hours of advanced courses in the language selected as a major. Specific course requirements are as follows:

FRENCH

37.322-323 Survey of French Literature I and II (6), 37.427-428 French Composition and Conversation I and II (6), and 12 hours in advanced literature courses.

GERMAN

37.332-333 Survey of German Literature I and II (6), 37.437 German Composition and Conversation I (3), and 15 hours in advanced literature courses.

SPANISH

37.352-353 Survey of Spanish Literature I and II (6), 37.457-458 Spanish Composition and Conversation I and II (6) and 12 hours in advanced literature courses.

Related courses 12 hours
Art history, English literature, history, and music appreciation are recommended.

Electivesto complete 126 hours

UNDERGRADUATE COURSES

37.010 Language Conferences (No credit) Tutorial conferences to serve candidates for higher degrees preparing for tool examinations in modern languages. Offered to meet the needs of individual students.

37.120 Elementary French I (3) Oral-aural approach. Practice in hearing, understanding, and speaking idiomatic French. Inductive presentation of grammar and syntax. Dictation.

37.121 Elementary French II (3) Continuation of 37.120.

37.130 Elementary German I (3) Oral-aural approach. Practice in hearing, understanding, and speaking idiomatic German. Inductive presentation of grammar and syntax. Dictation.

37.131 Elementary German II (3) Continuation of 37.130.

37.140 Elementary Russian I (3) Oral-aural approach. Practice in hearing, understanding, speaking idiomatic Russian. Inductive presentation of grammar and syntax.

37.141 Elementary Russian II (3) Continuation of 37.140.

- 37.150 Elementary Spanish I (3)** Oral-aural approach. Practice in hearing, understanding, and speaking idiomatic Spanish. Inductive presentation of grammar and syntax. Dictation.
- 37.151 Elementary Spanish II (3)** Continuation of 37.150.
- 37.220 Intermediate French I (3)** Hearing, understanding, and speaking idiomatic French with stress on reading. Dictation. Readings in 19th and 20th century French literature. *Prerequisite, one year college French, two years secondary school French, or qualifying examination.*
- 37.221 Intermediate French II (3)** Continuation of 37.220.
- 37.230 Intermediate German I (3)** Hearing, understanding, and speaking idiomatic German with stress on reading. Dictation. Readings in German literature. *Prerequisite, one year college German, two years secondary school German, or qualifying examination.*
- 37.231 Intermediate German II (3)** Continuation of 37.230.
- 37.250 Intermediate Spanish I (3)** Hearing, understanding, and speaking idiomatic Spanish with stress on reading. Dictation. Readings in 19th and 20th century Spanish literature. *Prerequisite, one year college Spanish, two years secondary school Spanish, or qualifying examination.*
- 37.251 Intermediate Spanish II (3)** Continuation of Spanish 37.250.
- 37.322 French Literature I (3)** French literature from its beginnings to the romantic period. Reading of texts from *La Chanson de Roland* to Voltaire and Rousseau. *Prerequisite, 37.221.*
- 37.323 French Literature II (3)** French literature from romanticism to contemporary period. Readings from Chateaubriand to André Gide. Emphasis on spiritual and intellectual heritage of each succeeding literary generation. *Prerequisite, 37.322.*
- 37.324 Classical French Literature (3)** The classical ideal during the reign of Louis XIV. Study centered on 17th century writers other than dramatists: Descartes, Pascal, Boileau, Bossuet, La Fontaine, La Rochefoucauld, and Fenelon. *Prerequisite, 37.323.*
- 37.325 Classical French Drama (3)** Three great 17th century French dramatists: Corneille, Racine, and Moliere. Study of humanistic values expressed in their masterpieces. *Prerequisite, 37.324.*
- 37.332 German Literature I: 8th to 19th Century (3)** German literature from old high German period through the classical period to 19th century romanticism. *Prerequisite, 37.231.*
- 37.333 German Literature II: 1795-1910 (3)** Movements in German thought in 19th and 20th centuries. Selected writings. *Prerequisite, 37.332 or qualifying examination.*
- 37.341 Scientific German I (3)** Reading of selected scientific German texts. *Prerequisite, permission of instructor.*
- 37.342 Scientific German II (3)** Continuation of 37.341.
- 37.352 Spanish Literature I (3)** Spanish literature from epic to romantic period. Readings from *Poema del Cid* through *Siglo de Oro*. *Prerequisite, 37.250.*
- 37.353 Spanish Literature II (3)** Spanish literature from romanticism to contemporary period. Reading of texts from *El Duque de Rivas* and *Espronceda* to *Jimenez*. Emphasis on artistic and cultural standards of each period. *Prerequisite, 37.352.*
- 37.354 Novel of the Golden Age (3)** Cervantes and his works with emphasis on *Don Quixote*. *Prerequisite, permission of instructor.*
- 37.355 Drama of the Golden Age (3)** Lope de Vega, Tirso de Molina, Ruiz de Alarcón, and Calderon de la Barca.
- 37.420 The French Renaissance (3)** Renaissance and humanistic movement in France in the 16th century. Rabelais, the *Pleiade*, Ronsard, and Montaigne. *Prerequisite, permission of the instructor.*
- 37.421 18th Century France: Men and Ideas (3)** Attitudes and ideas of age of enlightenment as reflected in Montesquieu, Diderot, the Encyclopedists, Voltaire, and Rousseau. *Prerequisite, permission of the instructor.*

- 37.422 French Romanticism (3)** Development of romantic movement in early 19th century French literature. Analysis of sentiments of romanticists. *Prerequisite, permission of the instructor.*
- 37.423 French Realism (3)** 19th century French literature from decline of romanticism to turn of century. Attention to periods of expression known as realism, naturalism, and symbolism. *Prerequisite, permission of the instructor.*
- 37.424 Contemporary French Theater (3)** Representative plays of Paul Claudel, Jules Romains, Jean Jacques Bernard, Jean Giraudoux, Henri de Montherlant, and Jean Paul Sartre *Prerequisite, permission of the instructor.*
- 37.425 Contemporary French Novels (3)** Major trends in French novel since 1919. J. Romain, Mauriac, Duhamel, Gide, Malraux, Giraudoux, du Gard, Fournier, and Proust. *Prerequisite, permission of instructor.*
- 37.427 French Composition and Conversation I (3)** Emphasis on oral fluency and written accuracy of idiomatic French. Extensive readings and discussion. Required course for students majoring in French. *Prerequisite, permission of the instructor*
- 37.428 French Composition and Conversation II (3)** Continuation of 37.427. *Prerequisite, permission of the instructor.*
- 37.430 German Classical Period (3)** German literature from rationalism and the English influence to transition from classicism to romanticism. Lessing, Herder, Goethe, Schiller, Kant, and Fichte. *Prerequisite, permission of the instructor.*
- 37.431 Lessing (3)** Lessing as symbol of 18th century movements in German thought. Foundations of modern German drama. Preparation for work of Kant, nature of "Aufklärung," humanistic ideals.
- 37.432 Goethe (3)** Life, times, and representative works of Goethe. Reading of *Faust*. *Prerequisite, permission of instructor.*
- 37.433 Schiller (3)** Life, times, and representative works of Schiller. His ideas, psychology as expressed in drama, and moral and artistic standards. *Prerequisite, permission of instructor.*
- 37.437 German Composition and Conversation I (3)** Emphasis on oral fluency and written accuracy of idiomatic German. Extensive readings and discussion. Required course for students majoring in German. *Prerequisite, permission of instructor.*
- 37.438 German Composition and Conversation II (3)** Continuation of 37.437. *Prerequisite, permission of instructor.*
- 37.450 Modern Spanish Drama (3)** Representative plays by Echegaray, Benavente, Quintero Brothers, Marquina, Martinez Sierra, and Garcia Lorca. *Prerequisite, permission of instructor.*
- 37.451 19th Century Regional Novel (3)** Attitudes and ideas of regional novelists. Valera, Alarcon, Pereda, Galdos, Valdes, and Ibanez. *Prerequisite, permission of instructor.*
- 37.452 Spanish-American Literature I: 1519-1888 (3)** Spanish-American literature from chronicles to period of modernism. Historical and social factors. *Epic of Araucana to Mitre. Prerequisite, permission of the instructor.*
- 37.453 Spanish-American Literature II: Modern Period (3)** Modernism to contemporary period. Najera through Mistral. *Prerequisite, permission of the instructor.*
- 37.457 Spanish Composition and Conversation I (3)** Emphasis on oral fluency and written accuracy of idiomatic Spanish. Extensive readings and discussion. Required course for students majoring in Spanish. *Prerequisite, permission of instructor.*
- 37.458 Spanish Grammar, Composition, and Conversation II (3)** Continuation of 37.457. *Prerequisite, permission of the instructor.*
- 37.459 Contemporary Spanish Literature (3)** Generation of 1898 and contemporary poets, novelists, dramatists, and critics. *Prerequisite, permission of instructor.*

Music

Professors: JAMES McLAIN (Chairman); GORDON SMITH. *Assistant Professors:* GEORGE STEINER; EVELYN SWARTHOUT. *Lecturers:* JANET BABIGAN; ESTHER BALLOU; FRED BEGUN; ABE CHERRY; RICHARD DIRKSEN; MARGUERITE EGELER; GEORGE FOSS; KATHERINE FROST; MORRIS KIRSHBAUM; HARLAN LAUFMAN; WALLACE MANN; SYLVIA MEYER; ALMA RICH; VERA ROSS; FAYE SHAW; JOYZE SUTHERLAND; HAROLD WRIGHT.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Arts

University Requirements38-43 hours

Departmental Requirements:

All students majoring in music are required to complete a minimum of 6 hours in 43.152-153 Chorus (2), or 43.154-155 Orchestra (2).

ASSOCIATE IN ARTS

Major courses 18 hours

Including 43.102-103 Elementary Harmony (6), and 43.100-101 Appreciation of Music I and II (6) or 43.300-301 History of Music I and II (6).

BACHELOR OF ARTS (concentration in applied music, music history and literature, public school music, or music theory).

APPLIED MUSIC

(Orchestral Instruments, piano, organ, or voice)

Major courses40-47 hours

18 hours (including senior recital) in the instrument of specialization or voice, 16 hours in music theory (harmony, ear training and sight singing), 6 hours in music history, 3 hours in music form and analysis (for students specializing in orchestral instruments, piano, or organ), up to 4 hours in piano (as required) except for students specializing in piano and organ.

Related courses 12 hours

Tool courses 6-12 hours

6 hours of foreign language for students specializing in orchestral instruments, piano, or organ, 6 hours of French and 6 hours of German for students specializing in voice.

MUSIC HISTORY AND LITERATURE

Major courses 40 hours

15 hours in music history and literature, 16 hours in music theory (harmony and ear training and sight singing), 6 hours in applied music, 3 hours in music form and analysis.

Related courses 12 hours

Tool courses 12 hours

6 hours of French and 6 hours of German.

MUSIC THEORY

Major courses40-44 hours

16 hours in music theory (harmony and ear training and sight singing), 15 hours in advanced theoretical subjects, 3 hours in music literature, up to 4 hours in piano (as required).

Related courses 12 hours

Tool courses 6 hours

Foreign language.

PUBLIC SCHOOL MUSIC

Major courses	34 hours
Including 16 hours in music theory (harmony and ear training and sight singing), 6 hours in music history, 4 hours in keyboard harmony.	
Related courses	30-36 hours
Including 18-24 hours in courses in education.	
Tool courses	6 hours
Foreign language.	
Electives	to complete 126 hours

PERFORMANCE MAJOR

The program is designed especially for majors in applied music who show marked ability in the art of performance. Students may apply for admission to the program at the beginning of the sophomore year. Admission is by approval of the music faculty.

Major courses	59-63 hours
28 hours in major instrument or voice, 4 hours in minor instrument or voice, 16 hours in music theory (harmony and ear training and sight singing), 3 hours in music form and analysis, 6 hours in music history, 2 hours in conducting, 4 hours in keyboard harmony for students specializing in piano and organ.	
Tool courses	6-12 hours
Foreign language. 6 hours in one language for students specializing in orchestral instruments, piano, or organ. 12 hours (6 hours of French and 6 hours of German) for students specializing in voice.	
Music electives	to complete 126 hours
Selected from advanced theoretical courses and/or advanced music history and literature courses.	

GRADUATE DEGREE—Master of Arts

Course Requirements: Minimum of 30 hours of approved graduate work, which may include 6 hours of 43.799 Thesis Seminar-Music (3-6).

Written Comprehensive Examinations: 3, including one in music history, music literature, or composition; one in another of these fields; and one in a related field.

Other Requirements: Thesis, public recital of professional character and written research report in the fields of music history or literature related to the recital, or composition of a work in one of the larger forms of music and written analysis or public performance of the composition.

UNDERGRADUATE COURSES

- 43.100 Appreciation of Music I (3)** Materials of music as they relate to listening. Survey of principal forms through a study of representative works. Aural analysis.
- 43.101 Appreciation of Music II (3)** Continuation of formal survey. Critical survey of composers and styles of the classical, romantic, and modern periods. Aural analysis.
- 43.102 Elementary Harmony I (3)** Review of elements of music. Chord construction, triads and inversions.

- 43.103 Elementary Harmony II (3)** Dominant and secondary seventh chords. Non-chordal tones. Simple modulations. *Prerequisite*, 43.102.
- 43.104 Elementary Ear Training and Sight Singing I (1)** Simple rhythmic, melodic, and harmonic dictation. Sight singing of simple, diatonic melodies.
- 43.105 Elementary Ear Training and Sight Singing II (1)** Extended rhythmic, melodic, and harmonic dictation. Advanced melodic and simple part sight singing. *Prerequisite*, 43.104.
- 43.106 Elementary Conducting I (1)** Practical study of the techniques of the baton.
- 43.107 Elementary Conducting II (1)** Continuation of practical study of baton techniques. Introduction to score reading. *Prerequisite*, 43.106 or permission of department.
- ***43.120 Secondary Piano Lessons (1)**
- ***43.121 Secondary Organ Lessons (1)**
- ***43.122 Secondary Voice Lessons (1)**
- ***43.123 Secondary Orchestral Instruments Lessons (1)**
- 43.150 Class Instrumental Study (1)** Class instruction in the use of orchestral instruments. Primarily for students specializing in public school music. May be repeated for credit as required.
- 43.152 Chorus I (1)** Preparation and presentation of representative works from choral literature of all periods. *Prerequisite*, individual audition before the director.
- 43.153 Chorus II (1)** Continuation of 43.152. *Prerequisite*, 43.152, or individual audition before the director.
- 43.154 Orchestra I (1)** Preparation and presentation of orchestral literature of all periods. *Prerequisite*, individual audition before the director.
- 43.155 Orchestra II (1)** Continuation of 43.154. *Prerequisite*, 43.154, or individual audition before the director.
- 43.300 History of Music I (3)** Development of music in western civilization from the modal structures of the Greeks to the Baroque era. *Prerequisite*, 43.100-101, or permission of department.
- 43.301 History of Music II (3)** Development of music in western civilization from the Baroque era to the present day. *Prerequisite*, 43.300.
- 43.302 Advanced Harmony I (3)** Ninth, eleventh, and thirteenth chords. Extended modulations. *Prerequisite*, 43.103.
- 43.303 Advanced Harmony II (3)** Altered chords, dissonances, extended modulations, 20th century techniques. *Prerequisite*, 43.302.
- 43.304 Advanced Ear Training and Sight Singing I (1)** Advanced rhythmic, melodic, and harmonic dictation. Advanced melodic and harmonic sight singing. *Prerequisite*, 43.105.
- 43.305 Advanced Ear Training and Sight Singing II (1)** Contrapuntal and advanced rhythmic, melodic, and harmonic dictation. Contrapuntal and advanced harmonic sight singing. *Prerequisite*, 43.304.
- 43.306 Advanced Conducting I (1)** Score reading. Special techniques for choral and instrumental groups. *Prerequisite*, permission of department.
- 43.307 Advanced Conducting II (1)** Continuation of 43.306. Rehearsal routines. *Prerequisite*, 43.306, or permission of department.
- 43.308 Counterpoint I (3)** Strict counterpoint in the various species in two and three parts. *Prerequisite*, 43.103, or permission of department.
- 43.309 Counterpoint II (3)** Strict counterpoint in the various species in four and five parts. Free counterpoint. *Prerequisite*, 43.308.
- 43.310 Form and Analysis (3)** Harmonic and formal analysis of representative master works from all periods. *Prerequisite*, 43.303, or permission of department.
- 43.312 Keyboard Harmony I (2)** Practice of chord progressions in four part. Cadence patterns. Simple melodic harmonizations. Harmonic sequences. *Prerequisite*, permission of department.

* Primarily for non-music majors or music majors concentrating in other areas.

- 43.313 Keyboard Harmony II (2)** Continuation of 43.312. Modulation and transposition. Special projects for individual needs. *Prerequisite, 43.312, or permission of department.*
- 43.315 Composition I (3)** Study of the creative processes in music. Guidance in the construction of original compositions in the smaller forms. *Prerequisite, permission of department.*
- 43.316 Composition II (3)** Original work in classic, romantic, and modern idioms. Work adapted to individual needs and talents. *Prerequisite, permission of department.*
- †**43.320 Piano Lessons (2-4)**
- †**43.321 Organ Lessons (2-4)**
- †**43.322 Voice Lessons (2-4)**
- †**43.323 Orchestral Instruments Lessons (2-4)**
- 43.350 Applied Music Pedagogy (1)** Preparation for teaching individual lessons. Methods and repertoire. *Prerequisite, permission of department.*
- 43.352 Music for Elementary School Teachers (3)** Technical backgrounds and methods of presentation for teaching of music as a part of regular classroom instruction.
- 43.353 Folk Music for Elementary and Secondary School Teachers (3)** Study of cultural backgrounds and indigenous stylistic characteristics. Specific presentation techniques. Selected repertoire.
- 43.360 Group Piano Methods I (2)** Functional techniques and skills. Training in class management. Organization and handling of equipment and materials. For experienced teachers and advanced music students interested in group piano techniques. Observation and practice teaching.
- 43.361 Group Piano Methods II (2)** Preparation for teaching advanced classes. Observation and practice teaching. *Prerequisite, 43.360, or permission of department.*

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

- 43.500 The Baroque Era (3)** Study of the thorough-bass period. Development of styles and techniques leading to Bach and Handel.
- 43.501 The Classic Era (3)** The preclassical schools. Haydn, Mozart, and Beethoven, masters of the classical style.
- 43.502 The Romantic Period (3)** Historical and cultural background. Intensive study of composers and works with emphasis upon individual styles.
- 43.503 Music of the Twentieth Century (3)** Development of modernism in music from impressionism to the present. Schools, techniques, trends.
- 43.504 Chamber Music Literature (3-4)** Historical and stylistic survey. Detailed analysis of representative works from all periods. Performance laboratory for those who wish to study ensemble techniques.
- 43.505 Orchestral Literature (3)** Historical and stylistic survey. Detailed analysis of representative works from all periods.
- 43.506 The Opera (3)** Historical and stylistic survey. Analytical studies of specific representative works.

† Primarily for music majors in applied music. Students majoring in applied music under the Bachelor of Arts degree program are allowed 2 credit hours for each session of study in their major instrument or voice for a total of 16 credit hours. Applied music majors under the Performance program are allowed 2 credit hours for each session of study in their major instrument or voice during the Freshman year and 4 credit hours for each session of study during the Sophomore, Junior and Senior years.

Special fees are charged in addition to the usual tuition. Full-time undergraduate majors in music pay a fee of \$50 a session for one hour of lessons a week in their major instrument or voice. All other students pay a fee of \$45 a session for one-half hour of lessons a week in addition to the regular credit hour tuition. The charge is the same whether or not academic credit is desired. Practice rooms may be used for an additional fee of \$5 a session.

- 43.550 Choral Music in the Public Schools: Materials and Methods (3)** Survey of materials for building repertoire appropriate to various choral groupings. Methods of presentation. Special projects for teachers of elementary, junior high, and high schools.
- 43.551 Instrumental Music in the Public Schools: Materials and Methods (3)** Survey of materials for building repertoire appropriate to various instrumental groupings. Methods of effective presentation. Special projects for teachers in elementary, junior high, and high schools.
- 43.552 Current Trends in Music Education (3)** Comprehensive survey of recent developments in thought and practice. Individual projects for teachers in elementary, junior high, and senior high schools.
- 43.700 Analytical Studies in Musical Literature (3)** Contrapuntal, harmonic, and structural analysis of music of various styles, forms, and media. May be repeated for credit.
- 43.701 Renaissance Music (3)** Study of its role in the history of music with detailed analysis of representative works.
- 43.702 Seventeenth Century Music (3)** Study of its role in the history of music with detailed analysis of representative works.
- 43.703 Advanced Composition (3)** Guidance in writing in specified large forms. Work adapted to individual needs and talents. May be repeated for credit.
- 43.799 Thesis Seminar (3-6)**



Philosophy and Religion

Professors: JOHN E. BENTLEY; HAROLD A. DURFEE (Chairman); RALPH C. JOHN. *Assistant Professors:* EDWARD W. BAUMAN, JR.; ROGER T. SIMONDS; WILLIAM L. WEIFENBACH, JR. *Adjunct Professor:* RAYMOND J. SEEGER; *Professorial Lecturers:* CHRISTOPHER B. GARNETT; ARTHUR W. HUMMEL. *Lecturers:* A. BALFOUR BRICKNER; CHANNING E. PHILLIPS; WILLIAM E. SMITH; RUSSELL C. STROUP; A. E. THOMPSON.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts in Religion, Bachelor of Arts in Philosophy, Religion, or Religious Education. A combined degree in Philosophy and Religion is available through the Humanities major.

University Requirements38-43 hours

Students majoring in Philosophy are advised to complete 23.310-311 English Literature, 51.100 Physical Science Energy or 51.201 General Physics, 57.200 General Psychology, 65.201 Introduction to Anthropology. Students majoring in Religion or Religious Education are advised to complete 57.200 General Psychology, 65.201 Introduction to Anthropology.

Departmental Requirements:

ASSOCIATE IN ART

Major courses 18 hours

BACHELOR OF ARTS

Major courses27-30 hours

Students majoring in Philosophy complete 27 hours. Students majoring in Religion complete 27 hours and 3 hours of Philosophy. Students majoring in Religious Education complete 30 hours.

Related courses 12 hours

Tool courses 6 hours

French or German.

Electives:

ASSOCIATE IN ARTSto complete 63 hours

BACHELOR OF ARTSto complete 126 hours

GRADUATE DEGREE—Master of Arts in Philosophy

This degree will be available in 1959-60. Applications are now being accepted and graduate courses are now being offered.

Course Requirements: Minimum of 30 hours of approved graduate work, 6 of which may be in 47.799 Thesis Seminar in Philosophy (3-6).

Written Comprehensive Examinations: 3, one in the History of Philosophy with special emphasis upon a selected major philosopher and two from the following fields (Ethics, Epistemology, Metaphysics, Social Philosophy, Philosophy of Religion, Philosophy of Science, Philosophy of History, Aesthetics or a related field.)

Other Requirements: Proficiency examination in one research tool (French or German or an appropriate substitute), Thesis.

UNDERGRADUATE COURSES

PHILOSOPHY

47.100 Logic and the Scientific Method (3) Introduction to the nature of valid inference and its relation to the scientific method. Principles of reasoning; inductive and deductive processes of logical thinking.

- 47.101 Introduction to Philosophy (3)** Questions man has asked about himself, the world, and the origin, purpose and destiny of life; representative answers given by the great thinkers.
- 47.102 Philosophies Men Live By (3)** A study of selected philosophers in the history of western thought, and their relevance to human existence.
- 47.300 History of Philosophy: Ancient and Medieval (3)** Historical survey of representative philosophers from the early Greeks through the Middle Ages. Not open to Freshmen.
- 47.301 History of Philosophy: Modern (3)** Philosophers from the Renaissance to Hegel. Appraisal of modern philosophical tendencies in their relation to scientific, social, political, and religious developments. Not open to Freshmen.
- 47.303 American Philosophy (3)** Backgrounds and substance of American philosophy since colonial times. Role of philosophical ideas, European and indigenous, in the growth of the American culture. *Prerequisite, 3 hours of philosophy.*
- 47.305 Philosophies of the East (3)** Systems of thought in the East from ancient to modern times. Special emphasis upon philosophies of Confucianism, Taoism, Hinduism, and Buddhism.
- 47.310 Ethics (3)** Inquiry into the principles of moral evaluation, their relation to factual judgment, and individual and social behavior. Evaluation of traditional schools and theories of ethics. *Prerequisite, 3 hours of philosophy.*

RELIGION

Biblical Study

- 47.150 Introduction to the Old Testament (3)** Emphasis upon the substantive content of the Bible. Special attention to the historical method and the canon of Biblical interpretation.
- 47.170 Life and Teachings of Jesus (3)** Study of the career and teaching of Jesus of Nazareth. Nature and significance of His life for the history of mankind.
- 47.171 Life and Letters of Paul (3)** Life, letters, missionary activity of Paul. The Pauline epistles with special reference to the writer's conception of human nature, the incarnation, the Christian life, and eschatology.

Religious Education

- 47.320 Introduction to Religious Education (3)** Educational task of the modern church. Critical study of objectives, methods, organizations, programs for varied age levels. Field projects.
- 47.330 History and Philosophy of Religious Education (3)** Development of the educational process in synagogue and church. Emergence of guiding concepts and institutions; contemporary issues.
- 47.331 Curriculum for Religious Education (3)** Principles for curriculum construction. Survey and evaluation of materials used in the churches; practices in curriculum writing.
- 47.332 Working with Children in the Church (3)** Analysis of religious needs and possibilities in the development of the child. Consideration of resource materials, leadership, equipment, church-home relationships.

Christian Thought

- 47.370 History of Christian Thought I (3)** Survey of Christian thought from apostolic times through medieval period to Erasmus. Special attention to the rise of orthodoxy and heresy, in representative thinkers and councils.
- 47.371 History of Christian Thought II (3)** Analysis of the thought of the Protestant and Roman Catholic Reformations of the 16th century. The development and place of Christian ideas in the rise of modern secular culture.
- 47.374 Christian Ethics (3)** Study of the major types and issues of Christian ethical thought. *Prerequisite, 3 hours of Philosophy or Religion.*
- 47.375 Classics of Christian Experience (3)** Reading of selected classical expressions of the Christian faith. For 1959-60 Aquinas. *Prerequisite, 3 hours of Philosophy or Religion.*

- 47.376 Christian Belief (3)** Christian apologetics and its place in the intellectual interest of modern man. Introductory examination of Christian beliefs about God, the Bible, revelation, human nature, and destiny. *Prerequisite, 3 hours of religion or philosophy.* 1960.
- 47.380 Psychology of Religion (3)** Psychological appraisal of religious experience, prayer, worship, belief, interpersonal relationships, religious practices and behavior.

History of Religion

- 47.381 Church History I (3)** Growth and organization of the early Christian church. Interaction of the church with secular cultures and ideologies. Rise of the papacy; monasticism; missionary activity; development of doctrine.
- 47.382 Church History II (3)** The Reformation and its leaders. Conflict of church and state. Church history from the Protestant separation to the modern ecumenical movement.
- 47.383 Comparative Religion (3)** Synoptic study of the world's living religions, their founders, literature, teachings and values. Relationship of these religions to the life, thought, and institutions of the people whom they influence.
- 47.394 Post-Biblical Judaism (3)** The development of Judaism from the Maccabean period to the present. Selected philosophical, theological, institutional movements in Jewish faith and practice.
- 65.430 Primitive Religions (3)** See Department of Sociology and Anthropology.

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

Philosophy

- 47.500 Philosophy of Religion I (3)** Study of a leading contemporary movement in Philosophy of Religion. For fall 1958 Neo-Thomism. *Prerequisite, 6 hours of philosophy.*
- 47.501 Philosophy of Religion II (3)** Study of a leading contemporary movement in Philosophy of Religion. For spring 1959 Neo-Orthodoxy. *Prerequisite, 6 hours of philosophy.*
- 47.504 Contemporary Philosophy I (3)** Study of a leading contemporary movement in Philosophy. For fall 1959 Existentialism. *Prerequisite, 6 hours of philosophy.*
- 47.505 Contemporary Philosophy II (3)** Study of a leading contemporary movement in Philosophy. For Spring 1960, Analytic Philosophy. *Prerequisite, 6 hours of philosophy.*
- 47.506 Recent Philosophy (3)** Reading and analysis of selected leading philosophers since Hegel as the background of contemporary philosophical movements. For spring 1959, Husserl and Kierkegaard. *Prerequisite, 6 hours of philosophy.*
- 47.510 Aesthetics (3)** Nature of beauty and the relation of the philosophy of the beautiful to the fine arts and to human experience. Representative thinkers from Plato to Santayana and Dewey. *Prerequisite, 3 hours of philosophy.*
- 47.521 Philosophy of Science (3)** A study of the relationship of modern philosophy to the findings of modern science. *Prerequisite, 3 hours of philosophy.*
- 47.530 Social Philosophy (3)** Study of leading proposals regarding the philosophical foundation of modern culture and society. *Prerequisite, 3 hours of philosophy.*
- 29.504 Philosophy of History (3)** See Department of History.
- 65.580 Movements and Institutions of European Christianity (3)** See Department of Sociology and Anthropology.
- 65.581 Movements and Institutions of American Christianity (3)** See Department of Sociology and Anthropology.
- 47.799 Thesis Seminar (3-6)** Directed research of M.A. thesis proposals.

Speech and Drama

Associate Professor: J. H. YOCUM (Chairman); *Assistant Professors:* S. M. VINOCOUR;
Lecturers: LOUIS FRANA; SIDNEY L. KIRSTEN; BETTY M. VETTER; DALE E. WOLGAMUTH.

Degree Programs

UNDERGRADUATE DEGREE—Bachelor of Arts

University requirements 38-43 hours

Departmental Requirements:

Major courses 42 hours
 Including 67.100 Voice and Diction, 67.110 Public Speaking, 67.122
 Introduction to Theatre, and 67.123 Play Production.

Tool courses 6 hours
 One year of a foreign language.

Electivesto complete 126 hours
 See also Interdepartmental Humanities Major and performance major
 in Theatre and Radio-TV.

No graduate degree is offered in the field of speech and drama. Advanced level courses are offered for advanced undergraduates and as related courses for graduate students in other departments.

UNDERGRADUATE

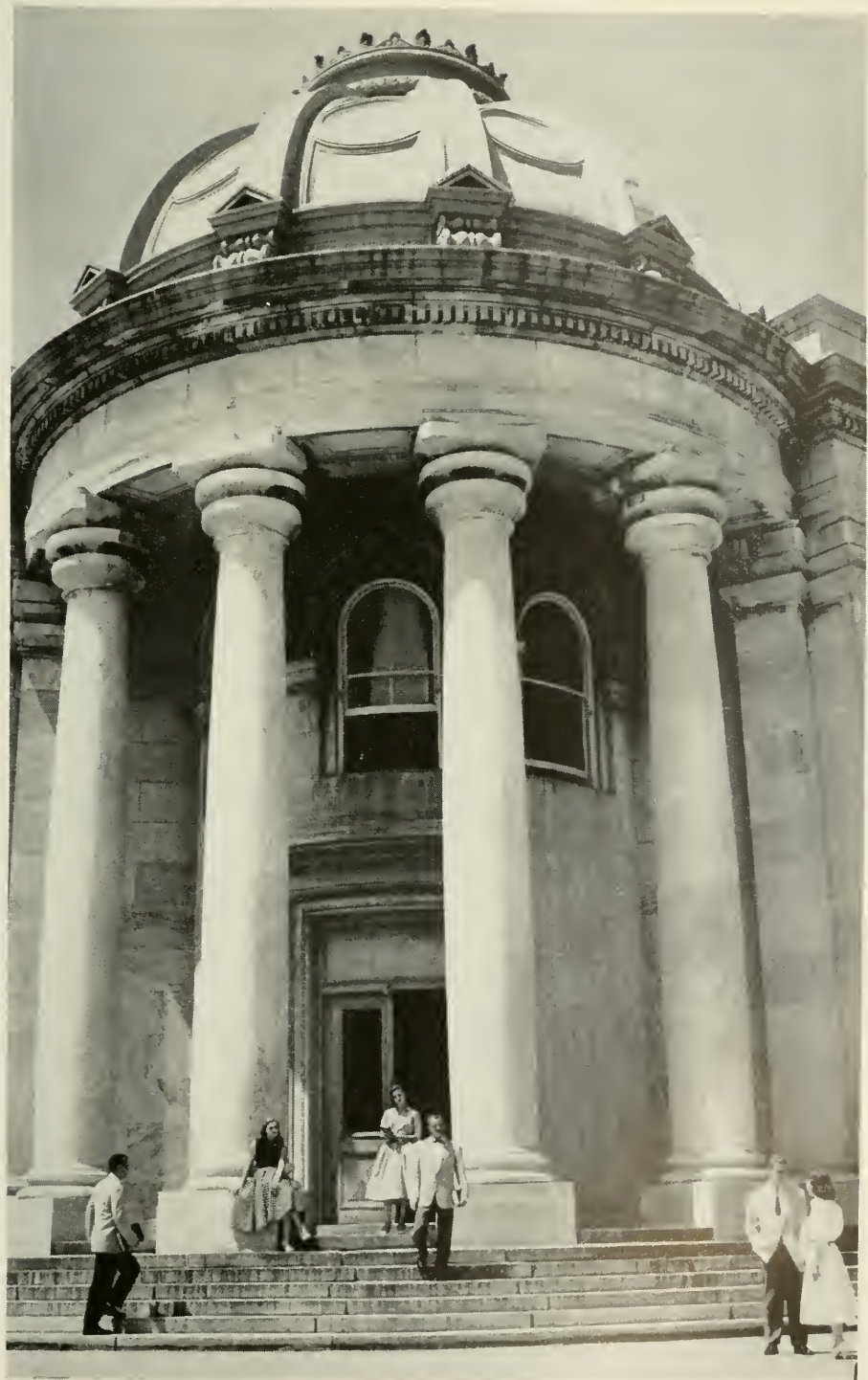
- 67.100 Voice and Diction (3) (Formerly 23.170)** Physiological and interpretive aspects of voice improvement and application of I.P.A. as a tool. Recordings and individual analysis included. Fee, part-time students, \$5.
- 67.110 Public Speaking (3) (Formerly 23.270)** Theory and application of fundamentals of public speaking with emphasis on organization and delivery of various types of speeches, audience psychology and factors of attention.
- 67.118 Forensics I (1)** Workshop for participation in intercollegiate forensics program. Consent of the instructor. May be repeated for total of 3 credits.
- 67.119 Forensics II (1)** Workshop for participation in intercollegiate forensics program. Consent of the instructor. May be repeated for a total of 3 credits.
- 67.120 University Players I (1) (Formerly 23.172)** Workshop for participation in productions of University Players with emphasis on work exclusive of acting. Consent of instructor. May be repeated for 3 credits.
- 67.121 University Players II (1) (Formerly 23.173)** Workshop for participation in productions of University Players with emphasis on work exclusive of acting. Consent of instructor. May be repeated for 3 credits.
- 67.122 Introduction to Theatre (3) (Formerly 23.273)** Survey of the various phases of theatre from the standpoint of dramatic literature and aesthetics.
- 67.123 Play Production (3) (Formerly 23.274)** Survey of technical aspects of theatre that go to make up a production, including direction, design, construction, and lighting.
- 67.170 Oral Interpretation (3) (Formerly 23.271)** Analysis, interpretation, and practice in expressive reading of literature to develop ability in sharing literature with an audience. *Prerequisite*, 67.100 or 67.110.
- 67.310 Argumentation and Debate (3) (Formerly 23.275)** Study and application of logic, evidence, and organization of materials for argumentative speaking with special attention to debate as a form of argument. *Prerequisite*, 67.110.
- 67.311 Persuasion (3) (Formerly 23.276)** The study and application of techniques of persuasive speaking with emphasis on the psychology of persuasion.
- 67.312 Discussion (3)** Study and application of techniques involved in public discussion and group problem solving in education, business administration, and civic leadership. *Prerequisite*, 67.110.

- 67.322 Stagecraft (3) (Formerly 67.350)** The techniques of scene construction and the basic elements of scene design. *Prerequisite*, 67.123.
- 67.340 Acting: I (3) (Formerly 23.372)** Fundamentals of acting, including pantomime and body control. *Prerequisite*, 67.170 or consent of instructor.
- 67.341 Acting: II (3) (Formerly 23.373)** The interpretation and presentation of roles from classic and contemporary drama. Emphasis is placed on styles of acting. *Prerequisite*, 67.340 or consent of instructor.
- 67.370 Oral Interpretation: Advanced (3) (Formerly 23.272)** Techniques of effective oral interpretation, presentation of selections from classical and modern drama and fiction. Interpretive recital required of each student. *Prerequisite*, 67.170.

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

- 67.511 Contemporary Speech Problems (3) (Formerly 23.405)** Study and application of unique problems and techniques involved in composition and presentation of national and international political and diplomatic public addresses.
- 67.514 Rhetoric: Classical and Medieval (3)** Study of rhetorical criticism from the Greeks to the Renaissance.
- 67.515 Rhetoric: Renaissance to Modern (3)** Study of rhetorical criticism from Renaissance to Modern.
- 67.516 American Rhetoric and Public Address (3)** The study of rhetorical criticism in the United States and the public addresses of representative American orators.
- 67.520 Scene Design: I (3)** The design of realistic settings for plays. This course presupposes some artistic ability on the part of the student. *Prerequisite*, 67.322 or consent of instructor.
- 67.521 Scene Design: II (3)** The design of settings for plays departing from realism. *Prerequisite*, 67.520.
- 67.522 Advanced Stagecraft (3)** Special construction problems, scenery and scenic units. *Prerequisite*, 67.322.
- 67.523 Stage Lighting: I (3)** The study of lighting instruments, control boards, and the use of lighting as an integral part of the play's design. *Prerequisite*, 67.123.
- 67.526 Stage Costuming: I (3)** The design and construction of costumes for use in plays from Biblical times through Renaissance. Fee, \$5.
- 67.530 Directing: I (3) (Formerly 23.472)** The direction of scenic units and dramatic situations in realistic drama. *Prerequisite*, 67.530.
- 67.531 Directing: II (3) (Formerly 23.473)** The preparation of the prompt book and the directing of nonrealistic drama. *Prerequisite*, 67.530.
- 67.550 History of the Theatre: I (3) (Formerly 23.375)** The development of the stage and the drama from Greek through Renaissance.
- 67.551 History of the Theatre: II (3) (Formerly 23.376)** The development of the stage and the drama from Renaissance to present.
- 67.556 History of the American Theatre (3) (Formerly 23.574)** The theatre in America as a cultural force from the colonial days to present.
- 67.560 Playwriting: I (3)** The construction of dramatic scenic units based on simple situations leading to the writing of a one-act play.
- 67.561 Playwriting: II (3)** The study of more complex dramatic situations with the view of writing a full-length play. *Prerequisite*, 67.560.
- 67.570 Theatre and Religious Education (3)** The selection of plays for presentation by church groups. Methods of staffing and equipping the church theatre. A previous course in stagecraft or play production is desirable.
- 67.580 Teaching of Speech and Drama in Secondary Schools (3)** Methods of teaching speech and drama in junior and senior high schools.
- 67.581 Teaching of Speech and Drama in College (3)**



Inter-Departmental Humanities Major

The University offers a program leading to the degree of Bachelor of Arts with an inter-departmental major in the Humanities. Students working toward this degree select their major courses from the fields of Art, English, Foreign Language, History, Music, Philosophy, Religion, or Speech and Drama. Those interested in this degree should consult the chairman of one of the Humanities departments in the College. Requirements are as follows:

UNDERGRADUATE DEGREE—Bachelor of Arts

<i>University Requirements</i>	38-43 hours
Students majoring in the Humanities should take 47.201, Introduction to Philosophy as part of their University requirements.	
<i>Departmental Requirements</i>	54 hours
18 hours in two fields of the Humanities and 12 hours in a third field, also Art 5.406 Interrelation of the Arts and one semester of individual research 490.	
Tool courses	6 hours
Modern foreign language.	
<i>Electives</i>	to complete 126 hours

Performance Major

THEATER AND RADIO-T.V.

The University offers an inter-departmental program leading to the degree of Bachelor of Arts in Theatre and Radio-TV. Students interested in this degree should consult either the Department of Communication or the Department of Speech and Drama.

UNDERGRADUATE DEGREE—Bachelor of Arts

<i>University Requirements</i>	38-43 hours
<i>Major courses:</i>	
Required courses	21 hours
Including 17.260 TV-Radio Practices, 17.262 TV-Radio Procedures, 17.362 TV-Radio Speaking, 67.100 Voice and Diction, 67.122 Introduction to Theatre, 67.123 Play Production.	
Performance skills	15 hours
Including 6 hours selected from 17.364 TV-Radio Announcing or 17.567 Advanced TV-Radio Acting, 67.170 Oral Interpretation, or 67.340 Acting: I.	
Area of specialization	9 hours
Radio, TV or Theatre Production or Theatre Direction.	
Humanities or Social Sciences (beyond introductory course)	18 hours
or	
Education	24 hours
<i>Electives</i>	to complete 126 hours
For course listings and descriptions, see Communication and Speech and Drama.	



Division of
NATURAL SCIENCES AND MATHEMATICS

Biology

Chemistry

Geology

Mathematics

Physics

Statistics



Biology

Professor: SUMNER O. BURHOE (Chairman). *Assistant Professor:* MARTHA C. BRADLEY. *Adjunct Professor:* O. B. HUNTER, JR. *Professorial Lecturers:* MARK CONNER; HERBERT SEVERSMITH. *Lecturers:* HERBERT BARNETT; LESTER HARRIS; JOHN KELLER; CHARLES RALPH; WILLIAM REESE, JR. *Teaching Fellow:* EDWARD E. BURGEE.

Degree Programs

The Department of Biology provides basic training in Biology emphasizing Bacteriology, Botany, Embryology, Genetics, Medical Technology, Physiology, and other specialized fields of study. The curriculum is planned for those with a professional interest in any one of several of the Biological Sciences.

The Department of Biology also provides adequate curricula for pre-medical and pre-dental students.

UNDERGRADUATE DEGREES—Bachelor of Science. See page 86 for information concerning requirements for the degree of Bachelor of Science with major in distributed sciences.

University Requirements 38-43 hours

Students majoring in biology are advised to complete 9.210 General Zoology (4), 9.211 General Botany (4), 57.200 General Psychology (3), 65.200 Introduction to Sociology (3), and 65.201 Introduction to Anthropology (3), as a part of their University requirements.

Departmental Requirements:

BACHELOR OF SCIENCE

Major courses 40 hours

9.210 General Zoology (4), 9.211 General Botany (4), 9.301 Physiology (4), 9.310 General Bacteriology (4), 9.400 Biology Journal Literature (2), 9.404 Comparative Vertebrate Anatomy (4), 9.507 Genetics (3), 9.510 Vertebrate Embryology (4), and 11 additional hours.

Related courses 24 hours

15.110 and 15.111 General Chemistry I and II (8), 15.310, 15.311, 15.320, 15.321 Organic Chemistry I and II (8), 51.200 and 51.201 General Physics I and II (8).

Tool courses 12 hours

41.110 Algebra (3), 41.111 Analytic Geometry (3); and 6 hours of French or German.

Electivesto complete 126 hours

GRADUATE DEGREES—Master of Science

Course Requirements: Minimum of 30 hours of approved graduate work, 6 hours of which may be in 9.799 Thesis Research in Biology.

Written Comprehensive Examinations: 3, one to be selected from the areas of vertebrate or invertebrate zoology (classification, morphology, life histories, and physiology), 2 from among the following specialized fields of biology: botany, ecology, parasitology, bacteriology, physiology, histology and cytology, genetics and evolution.

Other Requirements: Reading proficiency in technical German, French or Russian; Thesis based on 9.799 Thesis Research and oral defense of thesis.

MASTER OF SCIENCE IN SCIENCE TEACHING—(See page 86 for information concerning requirements for this degree).

UNDERGRADUATE COURSES

Biology

- 9.100 Human Biology (3)** Nature of living organisms. Structure, development, functions of animals with special attention to man. Demonstrations. 3 hours of lecture. No laboratory.
- 9.210 General Zoology (4)** Structure, function, development, life histories, classification, heredity, evolution of animals. 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.211 General Botany (4)** Structure, function, development of plants. Survey of plant kingdom. Study of campus woodland. 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.301 Physiology (4)** Functions of the vertebrate organ systems with special reference to those of man. *Prerequisite, one year of biology and one year of chemistry.* 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.310 General Bacteriology (4)** Bacteria and their relationship to human welfare. Culture methods. Principles of sterility; aseptic techniques. *Prerequisite, 8 hours of biology and general chemistry.* 2 hours of lecture and 4 hours of laboratory. Laboratory fee, part-time students, \$10.
- 9.400 Biology Journal Literature (2)** Consideration of current developments and research in Biology. Reviews, reports, discussion of articles in scientific publications. *Prerequisite, permission of department.* 2 hours of lecture.
- 9.404 Comparative Vertebrate Anatomy (4)** Classification and comparative anatomical studies of selected organ systems of certain important vertebrate groups. *Prerequisite, 12 hours of biology.* 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$10.
- 9.408 Plant Taxonomy (4)** Study of local flora; characteristics, phylogeny, ecology. Extensive field work collecting and identifying specimens. Includes trees, shrubs as well as the other flowering plants. *Prerequisite, 9.211.* 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.450 Advanced Biological Studies (4)** Introduction to research provided for competent students in field of special interest. *Prerequisite, permission of department chairman.* Laboratory fee, part-time students, \$5. Offered to meet the needs of individual students.
- 9.460 Clinical Laboratory Practice (10)** Six-month apprentice experience in laboratory of a hospital affiliated with the University in its medical technology program. *Prerequisite, permission of department and advanced standing with major interest in medical technology.* May be taken twice for credit. Hours arranged.

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

- 9.500 Invertebrate Zoology (4)** Morphology, physiology, and evolutionary relationships of invertebrate animals. *Prerequisite, 12 hours of Biology.* 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.503 General Entomology (4)** Morphology, life history, classification, and economic importance of insects. *Prerequisite, 9.210.* 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.505 Plant Anatomy (4)** Advanced study of anatomy and physiology of roots, stems, leaves, flowers, and fruits of seed plants. Distribution and ecological aspects also considered. *Prerequisite, 12 hours of Biology.* 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.507 Genetics (3)** Principles of heredity and variations in animals and plants. Problems to illustrate Mendelian inheritance. *Prerequisite, General Zoology or General Botany.* 3 hours of lecture.

- 9.510 Vertebrate Embryology (4)** Mechanics of development. Formation of germ cells, fertilization, cleavage of the fertilized ovum, morphogenesis, and later development of the frog, chick, and pig. *Prerequisite*, 12 hours in biology. 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.514 Animal Histology (4)** Structures and properties of cells. Microscopic study of tissues and organs of representative mammals, including man. *Prerequisite*, 12 hours in biology. 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.515 Biological Technics (4)** Fundamental techniques in the preparation of microscopic slides of plant and animal tissues. Whole mounts. Microphotography. Embedding in plastics. *Prerequisite*, permission of department chairman. 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.518 Parasitology (4)** Parasites and their relationships to disease and human welfare. Life histories, morphology, identification, and parasitological preparations. *Prerequisite*, 12 hours in biology. 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.519 Animal Ecology (4)** Study of local animals and their adaptation, geographical distribution, behavior, relationship to environment. *Prerequisite*, 9.210, 9.211. 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 9.520 Experimental Embryology (4)** Mechanics of fertilization and growth. A review of important contributions in the field of experimental embryology. *Prerequisite*, 9.510. 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$10.
- 9.521 Advanced Genetics (4)** A consideration of salivary chromosomes, the nature of the gene, chromosomal irregularities, polyploidy, and mutations. Breeding experiments with *Drosophila* and small mammals will be conducted. *Prerequisite*, 9.507. 2 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$10.
- 9.560 Endocrinology (4)** The structure and function of the endocrine glands with emphasis on their control of biological processes. *Prerequisite*, 9.301. Laboratory fee, part-time students, \$10.
- 9.799 Thesis Research in Biology (3-6)**

Chemistry

Professor: LEO SCHUBERT (Chairman). *Associate Professors:* MARY H. ALDRIDGE; ALICE A. PADGETT. *Adjunct Professors:* DANIEL BANES; KEITH C. JOHNSON; FRANK S. GRIMALDI. *Professorial Lecturers:* BERNARD L. HORECKER; JOHN K. TAYLOR; ISAAC WELT. *Lecturers:* HOWARD L. ANDREWS; STANLEY BLOCK; IRVING BREGER; LAWRENCE KUSHNER.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Science

See page 86 for information concerning requirements for the degree of Bachelor of Science in Distributed Sciences.

University Requirements 38-43 hours
Students majoring in chemistry are advised to complete 15.110 and 15.111 General Chemistry I and II (8) as part of their University requirements.

Departmental Requirements:

ASSOCIATE IN ARTS

Major courses 18 hours
Related course 4 hours
Laboratory course in biology or geology.
Tool courses 6 hours
41.110 Algebra (3) and 41.111 Analytic Geometry (3).

BACHELOR OF SCIENCE

Major courses 43 hours
15.110 and 15.111 General Chemistry I and II (8), 15.210 and 15.211 Qualitative Inorganic Analysis (5), 15.220 and 15.221 Quantitative Analysis (5), 15.310, 15.311, 15.320, 15.321 Organic Chemistry I and II (10), 15.500 and 15.501 Physical Chemistry I and II, (8), 15.507 Chemical Literature (1), and 6 additional hours in other approved 500-level courses.
Related courses 16 hours
Laboratory course in biology (4), laboratory course in geology (4), and 15.200 and 15.201 General Physics I and II (8).
Tool courses 12-24 hours
41.110 Algebra (3), 41.111 Analytic Geometry (3), 41.220 and 41.221 Calculus I and II (6), and competence at the two-year level in a foreign language (German, Russian, or French) (6-12). The level of achievement in a high school foreign language will be considered. German or Russian is recommended.

Electives:

ASSOCIATE IN ARTSto complete 63 hours
BACHELOR OF SCIENCEto complete 126 hours

GRADUATE DEGREES—Master of Science in Chemistry, Master of Science in Science Teaching. See page 86 for information on the Master of Science in Science Teaching.

MASTER OF SCIENCE IN CHEMISTRY

Course Requirements: Minimum of 30 hours of approved graduate work 6 of which must be in 15.799 Thesis Research.

Written Comprehensive Examinations: 2, selected from Inorganic Chemistry (including Qualitative Analysis), Quantitative Analysis, Organic Chemistry, Physical Chemistry, and Biochemistry. Both Organic Chemistry and Biochemistry may not be selected.

Other Requirements: Proficiency examination in technical German, Russian, or French, thesis and oral defense on thesis.

UNDERGRADUATE COURSES

- 15.100 The Science of Chemistry (3)** Principles and concepts of chemistry with applications to our culture. Study of matter, its transformations, properties, uses. Demonstrations, no laboratory. Terminal course for non-science majors.
- 15.110 General Chemistry I (4)** Introduction to the science of chemistry. The states and structure of matter, solutions, and equilibria. 3 hours of lecture, 3½ hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.111 General Chemistry II (4)** The elements and their compounds. Radiochemistry, electrochemistry, organic chemistry, biochemistry. Some laboratory work in qualitative analysis. *Prerequisite*, 15.110. 3 hours of lecture, 3½ hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.210 Qualitative Inorganic Analysis (3)** Theory of the separation and identification of the more familiar cations and anions. Must normally be taken concurrently with 15.211. *Prerequisite*, 15.111.
- 15.211 Qualitative Inorganic Analysis Laboratory (2)** Practice of the separation and identification of the more familiar cations and anions. Must normally be taken concurrently with 15.210. *Prerequisite*, 15.111. 6 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.220 Quantitative Analysis (3)** Theory of gravimetric and volumetric analysis. The balance. Must normally be taken concurrently with 15.221. *Prerequisite*, 15.210.
- 15.221 Quantitative Analysis Laboratory (2)** Practice of gravimetric and volumetric analysis. Must normally be taken concurrently with 15.220. *Prerequisite*, 15.210. 6 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.310 Organic Chemistry I (3)** Chemistry of carbon compounds. Aliphatic compounds and derivatives. Structure and mechanism theory. Must normally be taken concurrently with 15.311. *Prerequisite*, 15.111.
- 15.311 Organic Chemistry I Laboratory (2)** Laboratory theory and practice in synthesis. Must normally be taken concurrently with 15.310. *Prerequisite*, 15.111. 6 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.320 Organic Chemistry II (3)** Aromatic hydrocarbons and derivatives. Isocyclic and heterocyclic compounds. Stereoisomerism and carbohydrates. Must normally be taken with 15.321. *Prerequisite*, 15.310.
- 15.321 Organic Chemistry II Laboratory (2)** Laboratory work in synthesis and qualitative organic analysis. Must normally be taken concurrently with 15.320. *Prerequisite*, 15.310. 6 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.390 Reading Course (3)** Individual work on a special topic. Offered as an honors program under exceptional circumstances.
- 15.490 Undergraduate Research (3)** Individual laboratory research. Offered as an honors program under exceptional circumstances. Permission of Department Chairman required. Hours to be arranged.

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

- 15.500 Physical Chemistry I (4)** Principles of theoretical chemistry. States of matter, properties of solutions, thermodynamics, equilibrium. *Prerequisites*, 15.220, 15.210 General Physics II, and 41.221 Differential and Integral Calculus II. 3 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$10.

- 15.501 Physical Chemistry II (4)** Phase rule, kinetics, electrical conductance, electromotive force, atomic structure, radioactivity, surface chemistry. *Prerequisite*, 15.500. 3 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.507 Chemical Literature (1)** Survey of reference, journal, and source literature. Required of undergraduate majors.
- 15.508 Advanced Quantitative Analysis (3)** Theory of quantitative analysis with emphasis on instrumental methods such as spectrophotometry, electrometric titrations, electrodeposition, ion exchange. Must normally be taken concurrently with 15.509. *Prerequisite*, 15.220.
- 15.509 Advanced Quantitative Analysis Laboratory (2)** Proximate analysis of a mineral, instrumentation techniques. Must normally be taken concurrently with 15.508. *Prerequisite*, 15.220. 6 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.510 Advanced Inorganic Analytical Chemistry (3)** Systematic treatment of modern analytical methods and separations. *Prerequisite*, 15.508.
- 15.513 Electroanalytical Chemistry (3)** Electrochemical theory and ionic equilibria. E M F and pH. Conductometric, oscillometric, electrographic, coulometric, polarographic, and amperometric analyses. Controlled potential analysis and potentiometric titrations. *Prerequisites*, 15.500, 15.508.
- 15.520 Advanced Organic Chemistry I (3)** Theoretical and systematic organic chemistry. *Prerequisite*, 15.320.
- 15.521 Advanced Organic Chemistry II (3)** Theoretical and systematic organic chemistry. *Prerequisite*, 15.520.
- 15.522 Qualitative Organic Analysis (3)** Identification of organic compounds through systematic procedures. *Prerequisite*, 15.320. 1 hour of lecture, 6 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.524 Organic Preparations (3)** Preparative methods of organic chemistry. Emphasis on techniques such as vacuum distillation, chromatography, extraction. Reference to original literature. *Prerequisite*, 15.320. 1 hour of lecture, 6 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.526 Heterocyclic Compounds (3)** Chemistry of pyridine, pyrrole, quinoline, other heterocyclic compounds. *Prerequisite*, 15.520.
- 15.528 Quantitative Organic Analysis (3)** Semi-micro determination of carbon, hydrogen, nitrogen, halogen, and certain functional groups. *Prerequisites*, 15.220, 15.320, *permission of instructor*. 1 hour lecture, 6 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.530 Physical Organic Chemistry (3)** Polar and free radical mechanism, kinetics and stereochemistry of organic reactions. Physical techniques for obtaining information on organic reactions. *Prerequisites*, 15.320, 15.500.
- 15.540 Colloid and Surface Chemistry (3)** Application of physico-chemical principles to colloidal systems. Solid and liquid surfaces, adsorption, large molecules in solution, structure of natural and synthetic colloids. *Prerequisite*, 15.500.
- 15.542 Chemical Kinetics (3)** Reaction rates in gaseous and liquid systems, energy of activation, catalysts. *Prerequisite*, 15.500.
- 15.544 Molecular Structure (3)** Structure of atoms and molecules. Methods for studying structure. *Prerequisite*, 15.500.
- 15.546 Thermodynamics (3)** Principles of chemical thermodynamics applied to simple chemical systems and solutions. Partial molal quantities. *Prerequisite*, 15.500.
- 15.550 Advanced Inorganic Chemistry (3)** Descriptive inorganic chemistry including the periodic table, coordination chemistry, hydrolysis, non-aqueous systems, related matters. *Prerequisite*, 15.220.
- 15.556 Radioactivity (3)** Radioactivity, isotopes, fundamental particles of matter, tracer chemistry. Instrumentation used for radioactivity. *Prerequisite*, 15.500. 2 hours of lecture, 2 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.560 Biochemistry I (4)** Fats, proteins, carbohydrates, and their digestion. Enzymes, vitamins, chemotherapy, immunology. *Prerequisite*, 15.320. 3 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$10.

- 15.561 Biochemistry II (4)** Biological antagonists, respiration, metabolism. Hormones, nutrition, medicine, the nervous system. *Prerequisite*, 15.560. 3 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$10.
- 15.562 Chemistry of Organic Drugs (3)** The preparation and synthetic analogues of therapeutically active substances. Salicylates, purine, and pyrimidine derivatives, alkaloids, sex hormones, cardioactive glycosides, and antibiotics. *Prerequisite*, 15.561.
- 15.563 Enzyme Chemistry (3)** Classification, kinetics, chemical properties, and mechanism of action; role in metabolic processes.
- 15.565 Physical Biochemistry (3)** Physical chemistry of large molecules such as protein aggregates, the Gibbs-Donnan equilibrium, electrokinetic phenomena, surface and interfacial tension, hydrogen-ion concentration. *Prerequisite*, 15.320.
- 15.566 Proteins and Amino Acids (3)** Detailed treatment of the chemistry and metabolism of amino acids, polypeptides, purines, pyrimidines, and proteins. *Prerequisite*, 15.560.
- 15.799 Thesis Research in Chemistry (3-6)**



Geology

Professor: JOHN W. FREY. *Adjunct Professor:* GEORGE S. SWITZER. *Lecturers:* HANS ADLER; WILLIAM BACK; THOMAS J. DUTRO, JR., GEORGE FAUST; JOHN HARTSTOCK.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Science.

University Requirements38-43 hours
Students majoring in geology are advised to complete 15.110-111 General Chemistry (8) and either 51.200-201 General Physics (8) or 27.110-111 Physical and Historical Geology (8) as part of their University requirements.

Departmental Requirements:

ASSOCIATE IN ARTS

Major courses 18 hours
8 hours of this requirement may be satisfied by completion of 27.110 Physical Geology (4) and 27.111 Historical Geology (4) as part of the University requirements.

BACHEOR OF SCIENCE

Major courses 40 hours
27.110 Physical Geology (4), 27.111 Historical Geology (4), 27.300-301 Mineralogy and Crystallography (8), 27.303 Invertebrate Paleontology (4), 27.306 Introduction to Petrology (3), 27.400 Structural Geology (3), 27.410 Field Geology (4), and 10 other hours. Recommend summer employment in field geology or summer course in accredited field geology camp.

Related courses 20 hours
15.110-111 General Chemistry (8), 51.200-201 General Physics (8), and 4 additional hours. Recommend for Mineralogy and Petrology complete Quantitative Analysis, for Paleontology complete Invertebrate Zoology, for Structural Geology and Geophysics complete Mechanics and Statics.

Tool courses 6-24 hours
6 hours of mathematics are required; an additional 6 hours of Calculus, and 12 hours of French, German, or Russian are recommended.

Electives:

ASSOCIATE IN ARTSto complete 63 hours

BACHELOR OF SCIENCEto complete 126 hours

GRADUATE PROGRAMS—Master of Science in Geology.

Course Requirements: A minimum of 30 hours of approved graduate work of which 4 may be in Seminar 27.700 or 27.701 each of which requires the completion of a technical paper of professional quality.

Written Comprehensive Examinations: 2 from the following 4 groups; (1) Mineralogy and petrology, (2) Structural geology and stratigraphic geology, (3) Paleontology and sedimentary geology, or (4) Geomorphology and Physiography of North America.

Other Requirements: Thesis or completion of 27.700 or 27.701.

UNDERGRADUATE COURSES

- 27.105 Earth Sciences (3)** The earth—its position and motions, evolution of land forms, the seas, soils, minerals. Climate. Life comes to earth. Environments, their relations to each other and man's activities.
- 27.110 Physical Geology (4)** Materials that constitute the earth and geologic processes that operate upon it. Natural phenomena. Field trips, laboratory assignments. 3 hours of lecture, 4 hours of laboratory. Laboratory fee, part-time students, \$5.
- 27.111 Historical Geology (4)** Earth history and the prehuman past. Physical history, the evolution of animals and plants from their earliest beginnings to their present form. Field trips, laboratory assignments. *Prerequisite*, 27.110. 3 hours lecture, 4 hours laboratory. Laboratory fee, part-time students, \$5.
- 27.202 Sedimentation (3)** Principles governing the sedimentary processes. Analysis of sediments, geologic interpretations of sedimentary rocks. *Prerequisite*, 27.111.
- 27.220 Basic Geography (4)** What maps tell, weather, climate, land forms, oceans. Natural resources, use and conservation. Land occupancy, regional patterns. Field trips and laboratory assignments. 3 hours lecture and 4 hours laboratory. Laboratory fee, part-time students, \$5.
- 27.300 Mineralogy and Crystallography (4)** Origin, occurrence, basic structure of minerals. Consideration of their chemical properties, and their crystallographic form and relationships. *Prerequisite*, 15.111 General Chemistry. 2 hours lecture, 4 hours laboratory. Laboratory fee, part-time students, \$5.
- 27.301 Mineralogy and Crystallography (4)** Systematic identification of mineral species, practice in the identification of unknown minerals. *Prerequisite*, 27.300. 2 hours lecture, 4 hours laboratory. Laboratory fee, part-time students, \$5.
- 27.302 Geomorphology (3)** Genesis, morphology, classification of land forms. *Prerequisite*, 27.110.
- 27.303 Stratigraphy (4)** Distribution, variation of sedimentary rocks in time and space. Field trips, laboratory assignments. *Prerequisite*, 27.202 or permission of instructor. 2 hours lecture, 4 hours laboratory. Laboratory fee, part-time students, \$5.
- 27.304 Invertebrate Paleontology (4)** Development of the invertebrate phyla as illustrated by fossils. Field trips, laboratory assignments. *Prerequisite*, 27.111. 2 hours lecture, 4 hours laboratory. Laboratory fee, part-time students, \$5.
- 27.310 Ground Water Geology (3)** Hydrologic cycle. Flow, permeability, transmissibility, specific yield, storage. Lithologic and structural controls. Water bearing formations. Hydrogeo-chemistry. *Prerequisite*, 27.202.
- 27.355 Physical Europe (3)** Physical subdivisions, origin, structure, and features; ethnography and nations; internal and external transportation and community patterns. *Prerequisite*, 27.105, 27.110, or permission of department.
- 27.400 Structural Geology (3)** Mechanics of rock deformation. Origin, development of some of the earth structures. *Prerequisite*, permission of department.
- 27.410 Field Geology (4)** Field problems in geology and mechanics of field mapping. *Prerequisite*, permission of department.

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

- 27.510 Optical Mineralogy (4)** Consideration of optical properties of minerals studied under polarized light. Identification of minerals in thin-sections. *Prerequisite*, 27.301. 2 hours lecture, 4 hours laboratory. Laboratory fee, part-time students, \$10.
- 27.511 Petrology and Petrography (4)** Origin, geologic relationships, identification of typical rocks, with emphasis on those of igneous and metamorphic origin. Identification of rocks in thin-sections. *Prerequisite*, 27.510. 2 hours lecture, 4 hours laboratory.
- 27.512 Chemical Petrology Igneous Rocks (3)** Nature and mechanism of processes involved in rock origins with emphasis on igneous rocks. *Prerequisite*, permission of department.

- 27.513 Chemical Petrology Metamorphic Rocks (3)** Nature and mechanism of processes involved in rock origins with emphasis on metamorphic rocks. *Prerequisite, permission of department.*
- 27.514 Economic Geology of Coal and Petroleum (3)** Origin. Geologic and geographic distribution. Methods of geologic and geophysical exploration. Extraction and methods of preparation for market. Reserves. *Prerequisite, permission of department.*
- 27.515 Economic Geology of Non-Metals (3)** Origin. Geologic and geographic distribution. Methods of exploration. Extraction. Reserves. *Prerequisite, permission of department.*
- 27.516 Economic Geology of Metallic Ores (3)** Classification of ore bodies. Processes of concentration. Structural effects. Geologic and geographic distribution of principal ores. Economic importance. *Prerequisite, permission of department.*
- 27.560 Hydrology (3)** Groundwater infiltration phenomena. Surface waters, runoff, waves in rivers, transport of solids, ripple formation. Case studies. Evaporation. Snow, ice, glaciers. *Prerequisite, permission of department.*
- 27.571 Tectonophysics (2)** Physical laws governing rock deformation. Stress and strain relationships in crystal structures. *Prerequisite, permission of department.*
- 27.576 Volcanology (2)** Interpretation of the physical phenomena associated with volcanic activity. *Prerequisite, permission of the department.*
- 27.587 Oceanography (3)** Oceanic features. Physical control of ocean currents, tides, waves. Distribution of light, temperature, salinity. Hydrologic climates and ecology. Deposits. *Prerequisite, permission of department.*
- 27.588 Advanced Paleontology (3)** *Prerequisite, permission of department.*
- 27.700 Seminar—Structural and Stratigraphic North America (4)** *Prerequisite, permission of department.*
- 27.701 Seminar—Paleontology (4)** *Prerequisite, permission of department.*

Mathematics and Statistics

Professors: WALTER F. SHENTON; JOHN H. SMITH (Chairman). *Assistant Professors:* DAVID J. KING; GRACE S. QUINN; STEVEN H. SCHOT. *Instructor:* LUCILLE REIFMAN. *Adjunct Professors:* ERNEST E. BLANCHE; HOWARD H. CAMPAIGNE; JEROME CORNFELD; WALTER W. JACOBS; ERNEST RUBIN; RAYMOND J. SEEGER; WALT R. SIMMONS. *Professorial Lecturers:* FRANZ L. ALT; JOSEPH BRAM; RUTH M. DAVIS; PHILIP DESIND; CHURCHILL EISENHART; CHARLES H. FRICK; WALTER GAUTSCHI; BERNARD HARRIS; ARDIE LUBIN; CLAIRE T. MACHLIN; DAVID B. ORR; WERNER C. RHEINBOLDT; SEYMOUR L. WOLFBEIN; VUJICA YEVDJEVICH. *Lecturers:* HENRY D. ARNETT; LUCILE K. ARNETT; LILLIAN M. AXTELL; ROBERT W. BRYANT; ARTHUR R. CARNDUFF; CHESTER R. CLARK; SUSA CONDLIFFE; LESLIE D. GATES, JR.; ARTHUR JAFFE; ELGY S. JOHNSON; THOMAS M. JOHNSTON; ANNE G. KANTOR; PAUL E. KLEBE; CAROL V. MCCAMMAN; MILTON MOSS; ALBRECHT J. NEUMANN; JOHN J. O'DONNELL; RUSSELL V. PERSON; RICHARD I. ROSS-BACHIER; THOMAS L. SAATY; JOSEPH H. WEGSTEIN; MARVIN ZELEN.

Degree Program

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Arts.

See Page 86 for information concerning requirements for the degree of Bachelor of Science with major in distributed sciences.

University Requirements 38-43 hours

51.200-201 General Physics I and II are required.

Departmental Requirements:

ASSOCIATE IN ARTS

Major courses 18 hours

41.110 Algebra (3), 41.111 Analytic Geometry (3), 41.220-221 Calculus I and II (6), 41.310 Linear Algebra (3), and 41.311 Theory of Equations.

BACHELOR OF ARTS (Major in Mathematics)

Major courses 24 hours

41.110, 41.111, 41.220, 41.221, 41.310, 41.320 Calculus III: Advanced Topics, and 6 hours from 41.311, 41.321 Differential Equations (3), and 41.440 Solid Analytic Geometry (3).

Related courses 12-13 hours

51.304 Principles of Mechanics (4) or other course in physics beyond 51.200-201 and 8 hours in other natural sciences or 9 hours in probability and statistics with calculus prerequisite.

Tool courses 6 hours

Six hours of Russian, German, or French.

BACHELOR OF ARTS (Major in Statistics)

Major and related courses 42 hours

69.200-300 Business Statistics I and II (6) or 69.201-301 Psychological Statistics I and II (6); 69.500 Mathematical Statistics (3), 69.502 Correlation Analysis (3), 69.504 Analysis of Variance (3), 69.510 Theory of Sampling I (3), 41.310 Linear Algebra (3), 41.476 Probability (3), and 18 additional hours of approved work emphasizing mathematics or fields of application.

Tool courses 18 hours

41.110-111 (6), 41.220-221 Calculus I and II (6) and 6 hours advanced mathematics or an approved language.

Electives:

ASSOCIATE IN ARTS	to complete	63 hours
BACHELOR OF ARTS	to complete	126 hours
GRADUATE DEGREES—Master of Arts, Doctor of Philosophy.		

MASTER OF ARTS

Course Requirements: At least 30 hours approved graduate work, including 3 hours in 41.799 Thesis Seminar.

Written Comprehensive Examinations: 3 approved fields. Mathematics: 41.1 Modern Algebra or 41.2 Matrix Theory and 41.11 Real Variables or 41.12 Complex Variables and another approved field. Statistics: 69.1 Statistical Theory and two other approved fields in mathematics, statistics, and fields of application.

Other Requirements: 6 semester hours of Russian, German, or French, or proficiency examination; thesis and oral examination on thesis.

DOCTOR OF PHILOSOPHY

Course Requirements: At least 72 hours of approved graduate work 30 of which must be completed in residence at The American University.

Written Comprehensive Examinations: 5 approved fields. Mathematics: 41.1 Modern Algebra or 41.2 Matrix Theory and 41.10 Real and Complex Variables and three other approved fields, at least two of which must be in mathematics or mathematical statistics, one may be in a field closely related to field of major interest. Statistics: 69.2 and 69.3 Advanced Statistical Theory I and II, and three fields from mathematics, statistics, and closely related natural and social sciences.

Other Requirements: Two languages chosen from Russian, German and French. Candidates in statistics may substitute mathematics for one language. Dissertation and oral examination on dissertation.

UNDERGRADUATE COURSES

MATHEMATICS

- 41.010 Elementary Algebra (0)** Fundamental operations, factoring, linear equations in one and two unknowns, fractional equations, powers, roots, quadratic equations, elements of trigonometry. Tuition, for part-time students, \$60.
- 41.100 Basic Mathematics (3)** Algebraic operations, logarithms, slide rule, algebraic and trigonometric functions and their graphs, simultaneous equations, determinants, progressions, related rates, simple maxima and minima problems. *Prerequisite*, 41.010 or advanced high school algebra. Not open to students with credit for 41.110 or 41.160.
- 41.110 Algebra (3)** Number systems, logic of algebra, linear and quadratic equations in one and two unknowns, logarithms, permutations, combinations, and the binomial theorem. *Prerequisite*, 41.010 or advanced high school algebra. Not open to students with credit for 41.100 or 41.160.
- 41.111 Analytic Geometry (3)** Coordinate systems, functions—algebraic and trigonometric; probability, mathematical induction. *Prerequisite*, 41.110.
- 41.160 Business Mathematics (3)** Required for business major. Logarithms, graphic and algebraic solutions of linear and quadratic equations, progressions, binomial formula, mathematics of investment. *Prerequisite*, 41.010 or advanced high school algebra. Not open to students with credit for 41.100 or 41.110.
- 41.162 Trigonometry (3)** Trigonometric functions, functions of multiple and compound angles, solution of triangles, introduction to spherical trigonometry. *Prerequisite*, 41.010 or advanced high school algebra. No credit if taken concurrently with, or following, 41.220.

- 41.220 Calculus I (3)** Differentiation and integration of polynomials; applications to maxima and minima, area, volume, and related topics; differentiation of transcendental functions. *Prerequisite*, 41.111.
- 41.221 Calculus II (3)** Related rates, and other applications of the derivative; integration by various substitutions and by parts, applications of definite integrals, approximate integration. *Prerequisite*, 41.220.
- 41.310 Linear Algebra (3)** Groups, rings, fields, determinants, minors, cofactors, matrices, rank, systems of linear equations, elementary transformations, bilinear forms. *Prerequisite*, 41.220 or equivalent maturity.
- 41.311 Theory of Equations (3)** Linear systems, rational solutions, polynomials real roots, complex roots, symmetric functions, relations among roots, systems of higher degree. *Prerequisite*, 41.220.
- 41.320 Calculus III: Advanced Topics (3)** Mean-value theorems, indeterminate forms, convergent and divergent series, expansion by Taylor's and MacLaurin's theorems, hyperbolic functions, partial differentiation and applications, multiple integrals. *Prerequisite*, 41.221.
- 41.321 Differential Equations (3)** Elementary differential equations, particular solutions and simple applications. Equations of first order, simultaneous equations, linear equations with constant coefficients, special equations of higher order. *Prerequisite*, 41.320.
- 41.440 Solid Analytic Geometry (3)** Coordinate geometry of curves and surfaces in three-dimensional space with emphasis on straight lines, planes, and quadric surfaces. *Prerequisite*, 41.310.
- 41.474 Probability (3)** Total, conditional, and compound probability; inverse probability, difference equations; laws of large numbers; continuous probability distributions. *Prerequisite*, 41.221.

STATISTICS

- 69.200 Business Statistics I (3)** Collection of data, classification, tables, charts, averages, dispersion, probability, normal distribution, two-variable regression and correlation. Business and economic applications. *Prerequisite*, 41.160 or equivalent. Not open to students with credit for 69.201.
- 69.201 Psychological Statistics I (3)** Collection of data, classification, tables, charts, averages, dispersion, probability, normal distribution, two variable regression and correlation. Applications in testing, experimental psychology, and personnel selection. *Prerequisite*, 41.110 or equivalent. Not open to students with credit for 69.200.
- 69.300 Business Statistics II (3)** Index numbers, secular trend, seasonal and cyclical variation, multiple regression and correlation, confidence intervals and tests of significance. *Prerequisite*, 69.200. Not open to students with credit for 69.301.
- 69.301 Psychological Statistics II (3)** Design of samples and experiments, contingency tables, special methods of two-variable correlation, multiple regression and correlation, confidence intervals and tests of significance. *Prerequisite*, 69.201. Not open to students with credit for 69.300.
- 69.400 Managerial Statistics (3)** Survey of first-year statistics (See 69.200 and 69.300); required of M.B.A. candidates entering without 6 hours of basic statistics. *Prerequisite*, 41.160 or advanced high school algebra and admission to M.B.A. program.

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

MATHEMATICS

Foundations and Algebra

- 41.502 Foundations of Mathematics I (3)** Modern developments in mathematics including elementary symbolic logic, truth tables, axiomatics, foundations of geometry, introduction to set theory, transfinite numbers. *Prerequisite*, 41.221 and further work or teaching experience in mathematics.

- 41.503 Foundations of Mathematics II (3)** Continuation of 41.502. Peano's axioms, Dedekind cuts, the real and complex number systems, functions, homeomorphism and topological concepts, groups, rings, fields and other algebraic systems. *Prerequisite*, 41.502 or equivalent.
- 41.510 Matrix Theory (3)** Vector spaces, linear transformations, similarity, rational and classical canonical forms, unitary spaces, unitary equivalence, quadratic forms, congruence, rings of matrices, matrix representations of groups and algebras. *Prerequisite*, 41.310.
- 41.512 Modern Algebra (3)** Groups, invariant subgroups, factor groups, homomorphisms rings, integral domains; fields, polynomial rings, principal ideal domains, groups with operators, modules, ideals, lattices, Boolean algebra. *Prerequisite*, 41.310.
- 41.515 Number Theory (3)** Divisibility, prime numbers, number-theoretic functions, residue classes and congruence of numbers, quadratic residues, diophantine equations, quadratic forms. *Prerequisite*, 41.221 and additional work or experience in mathematics.
- 41.616 Theory of Finite Groups (3)** The group concept; isomorphism, automorphism, and homomorphism; quotient groups; subgroups; cyclic groups; permutations, transitivity, and primitive groups; Sylow's theorem; Abelian groups. *Prerequisites*, calculus and advanced work in algebra.

Analysis, Geometry, and Topology

- 41.520 Introduction to Analysis I (3)** Limits, continuity, Bolzano-Weierstrass theorem, uniform continuity, Heine-Borel theorem, differentiability, Riemann and Stieltjes integrals, mean-value theorems, infinite series, sequences of functions, Arzela's theorem, Taylor's theorem, Weierstrass approximation theorem. *Prerequisite*, 41.320.
- 41.521 Introduction to Analysis II (3)** Functions of several variables, partial differentiation, Jacobians; implicit function theorem; line, surface, and space integrals; theorems of Gauss, Stokes, and Green; Fourier series. *Prerequisite*, 41.520.
- 41.523 Ordinary Differential Equations (2)** Linear differential equations with constant coefficients, existence theorems, linear differential equations of the second order with variable coefficients, boundary-value problems. Applications. *Prerequisite*, 41.321.
- 41.524 Partial Differential Equations (2)** First order linear equations, characteristics, complete integral, second order equations, hyperbolic equations, Riemann's method, elliptic equations, Green's functions, Poisson integral, parabolic equations. *Prerequisite*, 41.523.
- 41.525 Special Functions (2)** Fundamental properties of Gamma and Bessel functions, Legendre, Hermite, Laguerre, and Chebyshev polynomials; differential equations, asymptotic expansion; determination of zeros. *Prerequisite*, 41.521.
- 41.528 Vector Analysis (3)** Algebra and calculus of vectors; theorems of Green, Gauss, Stokes, applications to space and differential geometry, geometric optics, gravitational potential mechanics, hydrodynamics, elasticity, electromagnetism. *Prerequisite*, 41.221.
- 41.546 Point-Set Topology (3)** Topological spaces, open and closed sets, compactness, connectivity, metric-, Hausdorff-, and linear normed spaces, topological transformations, separation theorems, Jordan curve theorem, introduction to algebraic topology. *Prerequisite*, 41.520 or concurrent registration.
- 41.620 Complex Variables I (3)** Basic definition, necessary topological concepts, differentiation and integration of functions of a complex variable. Cauchy's theorem, Taylor and Laurent series, the elementary functions. *Prerequisite*, 41.521.
- 41.621 Complex Variables II (3)** Calculus of residues, singularities, analytic continuation, entire functions, conformal mapping, various special functions, periodic functions, multiple valued functions, Riemann surfaces. *Prerequisite*, 41.620.
- 41.622 Real Variables I (3)** Peano's postulates, the real number system, point set theory transfinite numbers, metric spaces, topological spaces, set functions. *Prerequisite*, 41.521.
- 41.623 Real Variables (3)** Additive set functions, measure, transformations leaving measure invariant, covering theorems, Lebesgue integral, Lebesgue convergence theorem, L^p -spaces, convergence in mean, Riesz-Fischer theorem. *Prerequisite*, 41.622.

- 41.625 Calculus of Variations (2)** Extremization of integrals, Euler equations, Weirstrass and Jacobi conditions, sufficient conditions for extrema, applications to geometrical optics and particle dynamics, isoperimetric problems, variable endpoints, Rayleigh-Ritz method. *Prerequisite*, 41.521.
- 41.626 Integral Equations (3)** Volterra equations of the first and second kind, Fredholm equations and theorems, symmetric kernels, orthogonal functions, Hilbert-Schmidt theory, applications to boundary value problems, singular integral equations. *Prerequisite*, 41.521.
- 41.628 Modern Theory of Ordinary Differential Equations (2)** Introduction to the qualitative theory of differential equations, stability criteria, existence of forced periodic solutions, perturbation methods. *Prerequisite*, 41.521.
- 41.629 Ordinary Differential Equations: Fuchsian Theory (2)** Existence theorem, equations with constant coefficients, equations with uniform analytic coefficients, regular singularities, Laplace transform, hypergeometric equations, Lamé's equations, Mathieu's equation. *Prerequisite*, 41.621.
- 41.630 Integral Transforms (3)** Laplace, Fourier, Hankel, Mellin and other transforms. Applications to boundary value problems. *Prerequisite*, 41.521.
- 41.634 Functional Analysis (3)** Topological vector spaces, Banach spaces, linear functionals and dual space, W^* -topology, uniform boundedness and closed graph theorems, completely continuous operators, Hilbert space, spectral theorem, unbounded operators. *Prerequisite*, 41.510 and 41.623.

Numerical Analysis and Computer Systems

- 41.560 Numerical Analysis I: Basic Problems (2)** Interpolation, finite differences, numerical differentiation, integration, and approximation by orthogonal functions, least squares, asymptotic representations, difference equations, continued fractions, planning tables, optimum interval tables, differencing. *Prerequisite*, 41.320.
- 41.561 Numerical Analysis II: Matrices (2)** Calculation of inverses of matrices by various methods, iterative processes for solving systems of simultaneous linear equations, and determination of eigenvalues and eigenvectors of matrices. *Prerequisite*, 41.510.
- 41.562 Numerical Analysis III: Ordinary Differential Equations (2)** Numerical solution of ordinary differential equations of initial value and boundary value types. Introduction to numerical solution of partial differential equations. *Prerequisite*, 41.321 and 41.560.
- 41.563 Numerical Analysis IV: Partial Differential Equations (2)** Sturm-Liouville problems, expansion theorem, maximum-minimum properties, theorems on asymptotic behavior, iteration methods, Rayleigh-Ritz method, difference methods. *Prerequisite*, 41.562.
- 41.565 Finite Differences (3)** Differences, interpolation, expansion of functions, summation, generating functions, difference equations, numerical integration, graduation, and other approximations. *Prerequisite*, 41.221.
- 41.566 Computer Design I (2)** Design of electronic computer systems; components (arithmetic unit, internal memory, control, input-output devices); storage and grading units, number representations and codes, Boolean algebra. *Prerequisite*, advanced work in mathematics and physics.
- 41.567 Computer Design II (2)** Topics from design of special purpose, general purpose, digital, analog and incremental computers; applications from information theory, switching theory, general information processing and control systems. *Prerequisite*, 41.566.
- 41.568 Computer Programming I (2)** Components of electronic digital computers, number system, computer words, numbers, instructions, address logic, codes, subroutines, problem analysis, scaled operations, flow diagrams, code checking, problem solving. *Prerequisite*, 41.221.
- 41.569 Computer Programming II (2)** Advanced coding, pseudo codes, interpretive routines, floating point operations, double precision operations, input conversion routines, service routines, automatic coding. *Prerequisite*, 41.568.

- 55.520 Automatic Data Processing Systems (3)** Nature of available equipment; types of management applications; methods of a feasibility survey; staffing, costing, programming, systems design, and other management considerations.
- 55.521 Problems of Automatic Data Processing Systems (3)** Case problem approach to the study of the most effective design and operation of automatic data processing systems. *Prerequisite, 55.520 or direct experience.*

Mathematical Physics

- 41.654 Partial Differential Equations of Mathematical Physics I (2)** Partial Differential equations in general, Gauss's function, boundary value problems, eigenvalue and eigenfunction problems of electromagnetic and acoustic radiation. *Prerequisite, 41.521.*
- 41.655 Partial Differential Equations of Mathematical Physics II (2)** Series expansions of arbitrary functions, vibration and eigenvalue problems, special functions defined by eigenvalue problems. *Prerequisite, 41.654.*
- 41.656 Mathematical Physics of Fluids I (3)** Historical development of concept of fluid, real fluids under conditions of turbulence, free surface, and unusual (high speed, low density, high temperature, low temperature) conditions. *Prerequisite, 41.524 or consent of Department.*
- 41.657 Mathematical Physics of Fluids II (3)** Global phenomena of fluids such as streams and winds, terrestrial and solar atmospheres, cosmic phenomena of fluids such as magneto-hydrodynamics and convection for a non-uniform, gravitational field. *Prerequisite, 41.656.*
- 41.658 Mathematical Topics in Hydraulics (2)** Flow principles, flow equations, conformal mapping, viscous flow, immersed bodies, flow in conduits, surface flow, transport of sediments, air-water mixture, wave motion, underground flow. *Prerequisite, 41.524 or consent of Department.*

STATISTICS

Applied Probability and Statistics

- 41.624 Operations Research (2)** The decision-making process; theories of decision, information theory, search theory, queuing theory, applications to physical and social science problems. *Prerequisite, advanced work in mathematics, statistics, and a physical science.*
- 41.582 Theory of Games I (2)** Zero-sum two-person games in matrix form; existence, nature of good strategies, computation of solutions. *Prerequisite, 41.510.*
- 41.583 Theory of Games II (2)** Linear programming, games in extensive form, games with an infinite number of pure strategies, an introduction to n-person games. *Prerequisite, 41.582.*
- 69.540 Labor Statistics I (3)** Labor force analysis; critical analysis of information on occupational descriptions and classifications, industrial classifications, industrial censuses, employment, payrolls, absenteeism, unemployment.
- 69.541 Labor Statistics II (3)** Wage rates, union scales, vacations, retirements; prices and real wages; sources, methods of collection, analysis, presentation; application to labor problems.
- 69.544 Biometrics I (3)** Bioassay, diagnostic tests, etc. Problem formulation, experimental design, methods of analysis. *Prerequisite, 69.504.*
- 69.545 Biometrics II (3)** Continuation of 69.544, which is prerequisite to this course.
- 69.550 Factor Analysis (3)** Describing measurements on a large number of variables in terms of a small number of factors; psychological applications. *Prerequisite, work in psychological tests, mathematics, and statistics at least through multiple correlation.*
- 69.570 Quality Control (3)** Application of elementary statistical methods to control of quality of product or work output. *Prerequisite, 69.300.*
- 69.571 Sequential Analysis (3)** Selection of observations singly or in groups until a hypothesis may be accepted or rejected with a specified risk. Emphasis on inspection problems. *Prerequisite, 69.504 and 69.570.*
- 69.572 Design of Experiments (3)** Characteristics of a good experiment; experimental designs and methods of analysis; maximizing precision of experiments. *Prerequisite, 69.300 or 69.301.*

- 69.573 Statistical Theory of Measurements (3)** Measurements, scales, direct versus indirect measurement. Limiting mean, true values, errors, mathematical and statistical convergence. Statistical techniques for detection and diagnosis of errors. Precision versus accuracy. *Prerequisite, advanced work in one of the sciences.*

Theory of Probability and Statistics

- 41.574 Theory of Probability I (3)** Foundations of the theory of probability; random variables, distribution functions, generating and characteristic functions. *Prerequisite, 41.521.*
- 41.575 Theory of Probability II (3)** Special distributions, limit theorems, Markoff chains. Introduction to stochastic processes. *Prerequisite, 41.574.*
- 69.500 Mathematical Statistics (3)** Frequency and sampling distributions; simple sampling; binomial, Poisson, and normal probability functions; cumulants; bivariate distributions; tests of significance. *Prerequisite, 41.221 and 69.300 or 69.301.*
- 69.502 Correlation Analysis (3)** Simple, partial, multiple correlation; confidence intervals for simple and partial regression coefficients; estimates with minimum variance; tests of significance; graphic methods. *Prerequisite, 41.221 and 69.300 or 69.301.*
- 69.504 Analysis of Variance (3)** Statistical analysis of randomized block. Latin square, factorial experiments; degrees of freedom, tests of significance; incomplete blocks; unequal frequencies; confounding; analysis of covariance. *Prerequisite, 69.502.*
- 69.510 Theory of Sampling I (3)** Maximizing efficiency of sample surveys; stratification; types of sampling units; sub-sampling; double sampling; biased methods of selection and forms of estimate; precision and bias of results. *Prerequisite, 41.221 and 69.300 or 69.301.*
- 69.511 Theory of Sampling II (3)** Advanced problems of sampling design. Cluster sampling, sub-sampling, types of costs; maximizing information per dollar; probability proportional to size, systematic sampling, restricted sample designs. *Prerequisite, 69.510.*
- 69.600 Estimation and Testing Hypotheses (3)** Least squares, maximum likelihood, confidence intervals. Properties of statistics and criteria of estimation; alternative hypotheses and errors of first and second kinds; desirable properties of test criteria. *Prerequisite, 69.502 and 69.504.*
- 69.604 Statistical Decision Functions I (3)** Convex sets, convex functions, finite games, minimax theorem, s-games, infinite games, statistical games, principles of choice, complete class theorems. *Prerequisite, 41.321, 41.474, and 69.504 or 69.571.*
- 69.605 Statistical Decision Functions II (3)** Decision problems, states of nature, action spaces, exponential families, Polyn-type distributions, additional complete class theorems, sufficient partitions, invariance, Hunt-Stein theorems, sequential and truncated procedures. *Prerequisite, 69.604.*
- 69.620 Multivariate Analysis (3)** Linear and non-linear discriminating functions; canonical correlation, factor analysis, multivariate analysis of variance. *Prerequisite, 69.502 and 69.600.*
- 69.671 Theory of Experiment Design (3)** Least squares estimation of effects for various experimental designs; tests of significance; construction of designs by means of finite geometries and difference sets. *Prerequisite, 41.221, 41.310 and 69.504.*

Seminars

- 41.710 Seminar: Algebra (3)** Research in algebra, involving individual projects. *Prerequisite, 41.512.*
- 41.720 Seminar: Analysis (3)** Research in analysis, involving individual projects. *Prerequisite, 41.621 or 41.623.*
- 41.799 Thesis Seminar.**

Physics

Professor: BANCROFT W. SITTERLY (Chairman), RALPH B. KENNARD. *Professorial Lecturers:* PAUL KALAVSKI; RANDALL S. CASWELL. *Lecturers:* DAVID SALTUS; JOHN F. ATKINSON; ISAAC D. WELT.

Degree Programs

UNDERGRADUATE DEGREE—Bachelor of Science. For information concerning Associate Degree program in general education consult the department chairman. See page 86 for information concerning requirements for the degree of Bachelor of Science with major in distributed sciences.

University Requirements38-43 hours

Students majoring in physics are advised to complete 51.200 and 51.201 General Physics I and II (8) as a part of their University requirements.

Department Requirements: Students must complete 41.110 Algebra and 41.111 Analytic Geometry before they may register for 51.200 General Physics I and they must complete 41.220 and 41.221 Calculus I and II (6) before they may register for courses in the department at the 300- or 400-level. Students majoring in physics are advised to complete 41.110 and 41.111 in their first year and to complete 41.220 and 41.221 and 51.200 and 51.201 concurrently during their second year.

Major courses33-36 hours

51.200 and 51.201 General Physics I and II (8), 51.300 Electricity and Magnetism (4), 51.303 Atomic and Nuclear Physics (3), 51.304 Principles of Mechanics (3), 51.307 Physical Measurements (3), and four additional courses in physics (300-500 level).

Related courses11-12 hours

15.110 and 15.111 General Chemistry I and II (8), and 4 hours in another laboratory science, or 47.521 Philosophy of Science.

Tool courses 15 hours

41.110 Algebra (3), 41.111 Analytic Geometry (3), 41.220 and 41.221 Calculus I and II (6), 41.320 Calculus III: Advanced topics (3), and 41.321 Differential Equations (3).

Electivesto complete 126 hours

No graduate degree is offered in the field of physics. Advanced level courses are offered for advanced undergraduates and as related courses for graduate students in other departments.

UNDERGRADUATE COURSES

51.100 The Science of Physics (3) Concept of energy and related concepts of physics in fields of mechanics, heat, electricity, radiant energy, nuclear energy. Demonstrations; no laboratory.

51.105 Physics of Communication (3) Physical principles used in communication systems. Telegraphy, telephony, radio transmission and reception, television. Course for students majoring in Communications. *Prerequisite*, 51.100. SPRING.

51.200 General Physics I (4) Mechanics, heat, sound; properties of waves and matter. *Prerequisite*, 41.140. 3 hours of lecture, 2 hours of laboratory. Laboratory fee, part-time students, \$5.

- 51.201 General Physics II (4)** Electricity and magnetism, light, modern physics. *Prerequisite*, 51.200. 3 hours of lecture, 2 hours of laboratory. Laboratory fee, part-time students, \$5.
- 51.300 Electricity and Magnetism (4)** Electric charges, forces, fields. Magnetic and electro-magnetic phenomena. Direct current circuits. *Prerequisites*, 51.201 and 41.221. 3 hours of lecture, 3 hours of laboratory. Laboratory fee, part-time students, \$5.
- 51.301 Alternating and Transient Currents (4)** Inductance and capacitance in alternating current circuits. Impedance and resonance; oscillating circuits. Impedance matching; attenuators and filters. *Prerequisite*, 51.300. 3 hours of lecture, 3 hours of laboratory. Laboratory fee, part-time students, \$5.
- 51.303 Atomic and Nuclear Physics (3)** X-rays; electrons; atomic structure, atomic spectra. Radio-activity; nuclear particles, processes, structure. *Prerequisite*, 51.300.
- 51.110 Astronomy (3)** Man's place in the universe as defined by astronomical studies. The earth, solar system, stars, stellar and galactic systems. Cosmic processes, cosmic history.
- 51.168 Engineering Drawing I (2)** Practice in making working drawings for engineering projects.
- 51.169 Engineering Drawing II (2)** Practice in making working drawings for engineering projects. *Prerequisite*, 51.168.
- 51.304 Principles of Mechanics (3)** Plane statics. Elasticity. Dynamics of a particle, a fluid, a rigid body. Central forces and gravitation. *Prerequisites*, 51.201 and 41.221.
- 51.305 Applied Statics (3)** Systems of forces; moments; center of gravity. Stress and strain. Framed structures, beams, cables. Problem course primarily for pre-engineering students. *Prerequisite*, 51.200.
- 51.307 Physical Measurements (3)** Theory and methods of measurement; measures of precision; investigation of errors. Performance and analysis of selected experiments. *Prerequisites*, 51.201 and 41.221.
- 51.400 Heat and Thermodynamics (3)** Heat and temperature. Thermodynamic systems and laws of thermodynamics. Entropy. Heat engines. *Prerequisites*, 51.201 and 41.221.
- 51.401 Sound and Acoustics (3)** Theory of wave motion; production, propagation, and detection of sound waves with applications to music and speech; acoustical measurements; acoustics of auditoriums and broadcasting stations. *Prerequisites*, 51.201 and 41.221.
- 51.402 Optics (3)** Lenses, lens systems; optical instruments. Interference, diffraction, polarization. Nature and propagation of light. *Prerequisites*, 51.201 and 41.221.
- 51.410 Intermediate Laboratory (1)** Selected experiments to accompany intermediate courses in mechanics, heat, sound optics. Individual assignments. This course may be repeated for further credit. 3 hours of laboratory. Laboratory fee, part-time students, \$5.

ADVANCED COURSES

(500-level courses open to advanced undergraduate students)

- 51.504 Electronics I (4)** Theory of electron tubes and associated circuits. Equivalent circuit analysis of audio and feedback amplifiers, reactance tubes, oscillators, modulators, and detectors. *Prerequisite*, 51.301. 3 hours of lecture, 3 hours of laboratory. Laboratory fee, part-time students, \$5.
- 51.505 Electronics II (4)** Application of electronic principles to design and use of such devices as power supplies, voltage regulators, rectifiers, filters, multivibrators, photoelectric cells, and electron-tube instruments. *Prerequisite*, 51.504. 3 hours of lecture, 3 hours of laboratory. Laboratory fee, part-time students, \$5.
- 51.508 Physical Theory: Classical (3)** Topics in mechanical and electromagnetic theory. Vector methods; potential; Lagrange's and Hamilton's equations. Electromagnetic field; Maxwell's equations. *Prerequisite*, 51.303, 51.304, 41.321.
- 51.509 Physical Theory: Quantum (3)** Origins of the quantum theory. Introduction to wave mechanics. Quantum theory of atomic structure. Other applications. *Prerequisite*, 51.508.

Inter-Departmental Science Programs

Professor: LEO SCHUBERT (Chairman, Division of Natural Sciences and Mathematics).
Staff of the Departments of Biology, Chemistry, Geology, Mathematics, and Physics.

Degree Programs

UNDERGRADUATE DEGREE—Bachelor of Science in Distributed Science.

The University offers a program leading to the degree of Bachelor of Science with a major in Distributed Sciences for students who plan to teach the natural sciences in secondary schools or who wish to receive a broader background in science at the undergraduate level than is afforded by the usual Bachelor of Science degree. The degree is also planned to meet all pre-medical and pre-dental requirements. Students majoring in distributed sciences select their major courses primarily from offerings in the fields of biology, chemistry, geology, mathematics, and physics; pre-medical and pre-dental students are advised to elect certain courses in psychology for their fourth science. Students interested in a program in distributed sciences should consult the chairman of any of the natural science departments.

University Requirements 38-43 hours

Divisional Requirements:

Major courses 36 hours

At least 24 hours in one science; at least 12 in another.

Related courses 16 hours

8 hours in each of two additional sciences.

Tool courses 6-18 hours

Algebra (3) and Analytic Geometry (3). Competence at the two-year level in a foreign language (German, Russian, or French) (6-12). The level of achievement in a high school foreign language will be considered.

Electivesto complete 126 hours

GRADUATE DEGREE—Master of Science in Science Teaching.

Administered under the joint supervision of the Division of Natural Sciences and Mathematics and the Department of Education.

Course Requirements: A minimum of 30 hours of approved graduate work with 6 or more hours taken in the major field. The student's undergraduate and graduate courses in the major field must total a minimum of 32 credit hours. Other requirements include (a) a minimum of 8 hours in a second science field, (b) one year of college mathematics (algebra and analytic geometry or equivalent) taken either before entering the M.S.T. program or as non-credit courses along with the courses taken for graduate credit, (c) a course in either History of Science (3) or Philosophy of Science (3), and (d) 6 hours of graduate courses in education. A limited number of courses (not to exceed 12 hours) from the 300 to 400 level may be used toward the requirements of this degree. These courses may be selected from 9.310, 15.310-11, 15.320-21, 27.300, 27.301, 27.304, 41.310, 41.311, 41.321, 41.440, 51.300, 51.303, 51.304, 51.401, and 51.402.

Written Comprehensive Examinations: 2 in the fields of science and 1 in the field of education.



DIVISION OF SOCIAL SCIENCE

Anthropology

Economics

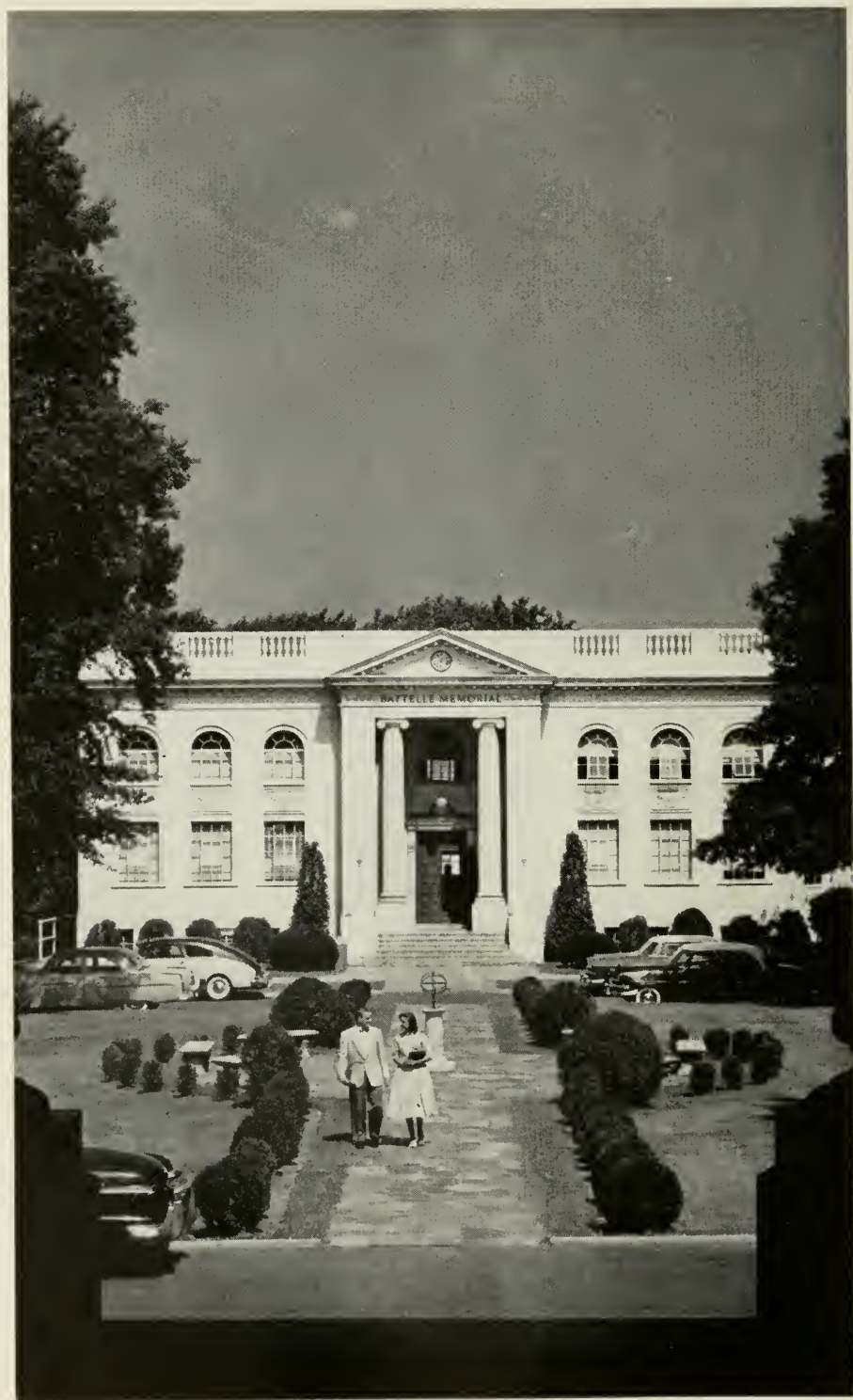
History

International Relations

Political Science

Psychology

Sociology



Economics

Professors: ERNST CORRELL; NIKOS G. PHOTIAS; FRANK M. TAMAGNA; MELVILLE J. ULMER (Chairman). *Associate Professor:* SIMON NAIDEL. *Assistant Professor:* WALTER D. BOWLES. *Instructor:* FRANCIS W. GATHOF, JR. *Adjunct Professors:* JOHN H. ADLER; EDWARD L. ALLEN; LLOYD D. BLACK; PAUL FISHER; J. HERBERT FURTH; RAYMOND W. GOLDSMITH; GUSTAV PECK; MURRAY ROSS; AMOS E. TAYLOR. *Professorial Lecturers:* QUINCY ADAMS; GEORGE W. BROOKS; LOUIS J. ECKER-RATZ; MANUEL EBER; LYNN R. EDMISTER; W. DUANE EVANS; ROBERT F. MARTIN; VIRGIL SALERA; ALFRED P. SHERRARD; JULIUS SHISKIN. *Lecturers:* ALFORD ARCHER; L. JAY ATKINSON; GERARD BRANNON; LORETO DOMINQUEZ; WILLIS T. GEHRKE; DONALD C. HORTON; LOUIS C. HUNTER; JACK R. JOHNSTONE; VLADIMIR KATKOFF; SAMUEL I. KATZ; SAR A. LEVITAN; LEONARD R. LINSENMAYER; LOUGHLIN F. MCHUGH; HERMAN P. MILLER; FRED RITCHIE; PAUL F. SMITH; ROBERT SOLOMON; HARRISON M. SYMMES.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Arts.

University Requirements 38-43 hours

Students majoring in economics are advised to complete 19.201 Introduction to Economics I (3) as a part of their University requirements.

Departmental Requirements:

ASSOCIATE IN ARTS

Major courses	18 hours
Including 19.202 Introduction to Economics II (3).	
Related courses	6 hours

BACHELOR OF ARTS

Major courses	30 hours
Including 19.202 Introduction to Economics II (3), 9 hours in theoretical economics, and 9 hours in descriptive economics as approved by the department.	
Related courses	12 hours
Advanced work selected from the following fields, with not more than 9 hours in any one: anthropology, business administration, government, history, international relations, philosophy, psychology, public administration and sociology.	
Tool courses	6 hours
Statistics, mathematics, accounting or a modern foreign language.	

Electives:

ASSOCIATE IN ARTS	to complete	63 hours
BACHELOR OF ARTS	to complete	126 hours

GRADUATE DEGREES—Master of Arts and Doctor of Philosophy in economics and in economic history.

MASTER OF ARTS DEGREE

Course Requirements: Minimum of 30 hours of approved graduate work, 6 of which may be in 19.799 Thesis Seminar in Economics (3-6).

Written Comprehensive Examinations: 3, including one in contemporary economic theory or the history of economic thought; and two others, at least one of which must be in a specialized field of economics or of economic history.

Other Requirements: Thesis, or completion of two approved graduate research seminars.

DOCTOR OF PHILOSOPHY

Course Requirements: Minimum of 72 hours of approved graduate work, at least 30 of which must be completed in residence at The American University.

Written Comprehensive Examinations: For the degree in economics—5, including one in the history of economic thought; one in contemporary economic theory; one in economic history; one in a specialized field of economics such as money and banking, labor economics, public finance, international trade, or economic planning; and one in another specialized field of economics or in a related field. For the degree in economic history—5, including one in history of economic thought or contemporary economic theory; three in specialized fields of economic history; and one in a specialized field of economics.

Other Requirements: Proficiency examinations in two research tools (accounting, French, German, statistics, or approved substitutes), thesis and oral examination on thesis. All candidates for degree in economics must present evidence, satisfactory to department, of a knowledge of statistical methods.

UNDERGRADUATE COURSES

- 19.201 Introduction to Economics I (3)** Institutional framework. Fundamental aggregative relationships of income, consumption, investment. Includes resources, agricultural, national income, business cycles, public and private finance, employment programs, international relations.
- 19.202 Introduction to Economics II (3)** Elementary theory of price, monopolistic competition, income distribution, foreign trade, public policy, comparative economic systems. *Prerequisite*, 19.201.
- 25.203 Introduction to Economic Geography (3)** World survey of production and consumption of major commodities. Economic development, standards of living in major regions. Resources, man-land ratios, techniques.
- 19.301 Intermediate Economic Theory (3)** Theory of relative prices and income distribution under perfect and imperfect competition. *Prerequisite*, 19.202.
- 19.303 Business Cycles (3)** Historical, theoretical analysis of the waves in economic activity and their social implications. An introduction to dynamic economics.
- 19.304 Landmarks of Economic Theory (3)** Significant economic ideas found in the writings of Smith, Ricardo, Mill, Marx, Marshall, Veblen, Keynes; historical settings in which their ideas developed.
- 19.311 Financial Organization of Society (3)** Structure, operation of the commercial banking system, savings banks, life insurance companies, investment banks, the securities markets, consumer and farm credit institutions, and the financial structure of corporate business.
- 19.312 Money and Banking (3)** The role of money and credit in the economy. Organization of the banking system, related institutions in the U. S. Introduction to monetary theory, credit control.
- 19.321 Economic Development I (3)** Origin, development, present status of economic institutions. World trends in population, living standards, output and technology.
- 19.322 Economic Development II (3)** Origin, development, current status of economic institutions with particular emphasis on the United States.

- 19.400 International Economics (3)** Basic factors in the functioning of the world economy, economic principles underlying international trade, international payments, determination of exchange rates, and capital transfers. *Prerequisite*, 19.202.
- 19.401 Consumer Economics (3)** Structure of consumption. Consumption goods standards and quality testing. Family expenditures and personal finance. Standards of living, income distribution, demand.

ADVANCED COURSES

(500 level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

Economic Theory

- 19.502 National Economic Policy (3)** An integrating seminar for advanced undergraduate and beginning graduate students. Lectures, discussions and research. Economic aspects of leading problems in public policy.
- 19.510 History of Economic Thought: I Early Period (3)** Social, economic theories from the Greek philosophers to 18th century physiocrats examined in relation to dominant and receding institutions.
- 19.511 History of Economic Thought: II Modern Period (3)** Economic problems and their solutions from the physiocrats and classicists to the marginal utility and general equilibrium schools, including institutional and socialist approaches.
- 19.512 Equilibrium Analysis: I Theory of Prices and Production (3)** Advanced analysis of demand curves, supply curves, and the equilibrium of the consumer, the firm, the industry under various market situations.
- 19.513 Equilibrium Analysis: II Theory of Income Distribution (3)** Application of general price theory to functional distribution. Demand for, supply of, labor and other productive services. Time preference and liquidity preference.
- 19.514 Theory of Income and Employment (3)** Analysis of economic aggregates; saving, investment, consumption, national income, employment. The multiplier and the acceleration principle. Role of prices, money supply, interest rates.
- 19.515 Theory of Business Fluctuations (3)** Advanced analysis of cycles in general level of business activity. Business cycle theories, Sismondi and Marx to Mitchell and Keynes. Implications for social, control, business forecasting, national-international stability.
- 19.516 Theory of Economic Development (3)** Development of capitalism and its long-term outlook. Role of business enterprise, technology, population growth, international relations, financial institutions, the relations between capital and labor.
- 19.517 Economic Planning: Income Stabilization (3)** Public, private policies relating to the stabilization of business: compensatory spending, incentive taxation, price and wage determination, inventory policy, monopoly and competition.
- 19.518 Social Accounting (3)** Accounting systems and their uses, as employed in economic analysis: national income, input-output techniques, flow of funds, international balance of payments, consolidated business and banking accounts.
- 19.519 Theory of Monopolistic Competition (3)** Theoretical problems arising from product differentiations, advertising, salesmanship, restricted entry, other modifications of pure competition. Interrelations among rival firms. Effect of monopolistic elements on cost, income distribution.
- 19.610 Mathematical Economics (3)** Application of mathematical reasoning to the study of economics, with particular attention to the analysis of microeconomic relations and their logical implications. *Prerequisite*, 41.220 *Calculus I*.
- 19.611 Construction of Economic Models and Economic Analysis (3)** Models as a tool of economic analysis. Discussion of some current models and their relation to economic projections and policy decisions.
- 19.613 Contemporary Economic Thought (3)** Current ideas in economics. Contributions of Marshall, Chamberlin, Robinson, Hicks, Keynes, Schumpeter, Hansen, the Institutionalists, and others.

- 19.614 Economic Planning: Prices, Output, Income Distribution (3)** Welfare implications in the determination of commodity prices, factor prices, allocation of resources. Effects of government planning.
- 19.616 Theory of Aggregates (3)** Economics of J. M. Keynes. Theoretical forerunners, modern refinements. Applications to business cycles, theory of economic development, public policy.
- 19.618 The Schumpeterian System (3)** Survey of Schumpeter's social philosophy, methodology, and most influential doctrines. Comparison of his system with other theoretical developments.
- 19.619 Economics of Growth (3)** Long-run behavior of national income, population, savings, investment, consumption, technology, business organization in industrially developed countries.
- 19.620 National Income and Wealth (3)** Concepts, sources, methods used in measuring and analyzing national income, income payments, national product, capital formation, consumer expenditures, saving, wealth.

Money, Credit, Banking

- 19.520 Monetary and Banking Theory (3)** Money and credit as factors influencing income, prices, employment, interest rates. Creation of credit and its control. Velocity of circulation. Liquidity preference.
- 19.524 Commercial Banking Policies (3)** Bank liquidity principles. Short-term lending practices, the term loan; agricultural, consumer, mortgage credit. Structure of interest rates. Bank capital, earnings, supervision.
- 19.596 International Finance (3)** Modern theories concerning price levels, balance of trade, capital movements. Exchange restrictions, regulations. The International Bank and International Monetary Fund.
- 19.621 Theory and Management of Central Banking (3)** Functions of central banks. Quantitative, qualitative instruments of central banking policy. Contribution of central banks to economic and monetary stabilization. International responsibilities.

Public Finance

- 19.529 Economics of Public Finance (3)** Principles of budgeting, public spending, debt management, tax policy. Comparative survey of fiscal institutions in the U. S. and abroad.
- 19.530 Fiscal Theory (3)** Government financing and fiscal control. Fiscal policies and welfare economics. How to support economic stabilization and full employment by fiscal means.
- 19.632 Advanced Fiscal Theory (3)** Discussion of selected problems of fiscal theory. Continuation of 19.530, which is prerequisite to this course.

International Economics

- 19.580 International Economic Relations (3)** National policies related to tariffs, reciprocal trade agreement programs, raw materials, cartels, foreign assistance. *Prerequisite*, 19.400.
- 19.581 Foreign Economic Policies: Problems Confronting the U. S. (3)** Formulation, execution of foreign economic policies and program. International economic and trade position of the U. S. Foreign assistance and underdeveloped areas programs.
- 19.582 Economic Problems: Latin America (3)** Economic geography, population, government organization, public finance, currency, foreign trade, balance of payments, foreign investments, prospects of economic advancement.
- 19.583 Economic Problems: Western Europe (3)** Economic geography, population, government organization, public finance, currency, foreign trade, balance of payments, foreign investments, prospects of economic advancement.

- 19.584 Economic Problems: Soviet Union (3)** Economic geography, population, government organization, public finance, currency, foreign trade, balance of payments, foreign investments, prospects of economic advancement.
- 19.585 Economic Problems: Middle East (3)** Economic geography, population, government organization, public finance, currency, foreign trade, balance of payments, foreign investments, prospects of economic advancement.
- 19.586 Economic Problems: Asia (3)** Economic geography, population, government organization, public finance, currency, foreign trade, balance of payments, foreign investments, prospects of economic advancement.
- 19.587 Structure and Operation of the Soviet Economy (3)** National planning structure and its evolution. Limitations, capabilities, economic potential of the U. S. S. R.
- 19.588 Comparative Foreign Economic Policies (3)** Lectures by foreign nationals on the international economic position and policies of principal trading countries. Significance of these policies to the U. S.
- 19.589 Economic Problems of Underdeveloped Countries (3)** Trends in living standards, capital formation, industrial-agricultural techniques, monetary structures, income distributions, foreign trade of underdeveloped countries; problems stemming from them.
- 19.592 Evolution of U. S. Tariff Policy (3)** Principle issues in the development of United States tariffs from their beginning to the present. The determination and effects of tariff policy.
- 19.593 U. S. Tariff Policy: Current Problems (3)** The trade agreements program. Impacts upon the American economy. Domestic, international aspects. Case studies.
- 19.595 Comparative Economic Systems (3)** Principles governing pricing, income, distribution, productivity, investment, economic stability, growth under capitalism, democratic socialism, totalitarian socialism.
- 19.680 Theory of International Trade (3)** Theories of international trade: gain from trade, income and international balances, exchange rate stability, alternative monetary standards. Basic policy issues. *Prerequisite*, 19.580.

Geography

- 25.521 Economic Geography:¹ Food and Agriculture (3)** World survey of production, distribution, consumption of agricultural commodities. Problems, potentials of major nations and world regions. International trade in agricultural products.
- 25.522 Economic Geography:² Mineral Resources and Manufacturing (3)** World survey of mineral resources and manufacturing industries. Power resources, raw materials, market areas, transportation, labor, and governmental factors.
- 25.523 Geographic Factors in Business and Industry (3)** Applications of geographical techniques to problems in agriculture, mining, manufacturing, marketing, transportation, communications, international trade, regional planning.
- 25.525 Economic and Political Geography of Underdeveloped Areas (3)** Population, territorial framework, resources, industries of areas included under Point Four. Plans, policies, problems projected on geographical setting.
- 25.530 World Political Geography (3)** Major political problems of the world related to geographic backgrounds. World problem areas, current issues, relationships of national states.
- 25.531 Geography of American Regions (3)** Resources, population, and industrial, agricultural, urban development. Historical sequence of settlement and resource use. Major regional problems, current trends.
- 25.532 Geography of Latin America (3)** Man and resources in Latin America studied by individual countries and regions. Population, economic and political life, natural resource base. Historical sequence of land occupancy.
- 25.540 Geography of Western Europe (3)** Population, resources, and economic and political life in Western Europe including the British Isles, Scandinavia, Finland, Benelux, France, Germany, Austria, Italy, Greece, Portugal, and Spain.

- 25.550 Geography of the Soviet Union and Eastern Europe (3)** Population, industrial and agricultural production, the resource base. Use of the land as influenced by politics, technology.
- 25.560 Geography of Southern and Eastern Asia (3)** Population, natural resources, economic and political life in Japan, Korea, China, India, Pakistan, Burma, Thailand, Indo-China, Indonesia, the Philippines.

Agricultural, Industrial, and Business Economics

- 19.540 Economics of Agriculture (3)** Factors influencing farm size, organization, product specialization. Economics of agricultural production, prices, public policy.
- 19.541 Economics of American Industry (3)** Survey of principal manufacturing industries of the U. S. Emphasis on sources of data and on the development of a workable technique of industry analysis.
- 19.542 Current Problems of American Industry (3)** Principal problems facing manufacturing industries in the U. S., such as changing raw material sources, locational and pricing adjustments. Trends in public control.
- 19.543 Industrial Concentration and Public Policy (3)** Extent and forms of monopoly in the American economy. Objectives, methods, techniques of government control. International comparisons.
- 19.544 Public Utility Economics (3)** Introduction to public utility problems. History, operation, finance, rates of public utilities. Government regulation, government operation.
- 19.546 Economic Analysis in Business (3)** Managerial economics: tools and methods for application of economic analysis to solution of business problems. Pricing, volume, new products, capital expansion. *Prerequisite, basic courses in accounting, economics, and statistics.*
- 19.547 Foundations of Business Forecasting (3)** Theoretical tools needed by executives to evaluate appraisals of economic outlook. Analysis of business cycles, fluctuations of income and employment. Economic indicators. Reliability of forecasts. *Prerequisite, 19.546.*
- 19.640 Current Issues of Agricultural Policies (3)** Agricultural policies in the U. S. and foreign countries. Technical developments, conservation of natural resources, prices, financing, production control.

Labor Policies

- 19.550 History of the U. S. Labor Movement (3)** Causes, results of organized efforts to regulate the conditions of work and the well-being of workers. Political, economic objectives; social problems raised by the labor movement.
- 19.551 History of the European Labor Movement (3)** Development of the labor movement in Europe. Comparative historical view of trade union ideologies, objectives, structure, methods. International trade union federations.
- 19.552 Labor and the Economic Order (3)** Trends affecting the position of labor in modern society. Problems of the determination of wages, hours, working conditions, social security.
- 19.553 Current Labor Problems: Domestic (3)** Union policies with respect to pensions, insurance, the guaranteed wage, incentive systems, profit sharing, adjustments for living costs and productivity. Non-economic provisions in labor contracts.
- 19.554 Comparative Labor Relations (3)** A comparative analysis of the status of labor and of labor relations in selected foreign industrialized and unindustrialized countries. Includes labor-management relations, labor-government relations, political parties and labor legislation.
- 19.555 Labor and the Law (3)** Actions of legislatures, courts, administrative agencies with respect to unions, their activities and responsibilities. Current legal problems of organized labor.

- 19.556 Labor-Government Relationship (3)** Wagner and Taft-Hartley acts. The National Labor Relations Board, special federal commissions and boards, other agencies affecting wages and working conditions.
- 19.557 Collective Bargaining (3)** Local, regional, national collective bargaining. Theory, procedure, objectives, scope, effects. Relationship to conciliation, mediation, arbitration, fact-finding boards. Occasional and as reading course on approval.
- 19.558 Settlement of Labor Disputes (3)** Advanced course in resolving labor disputes, including collective bargaining, grievance negotiations, conciliation, mediation, arbitration, and the like. Occasional and as reading course on approval.
- 19.559 Labor Economics (3)** Labor markets and wage structure. Wage theories and policies. Labor productivity, real wages, income, employment, unemployment.
- 19.575 Labor Relations and the Military Program (3)** Labor relations and manpower: military personnel, civil service employees, private industry. Strikes and jurisdictional disputes. Universal military service. Deferment policy. Occasional and as reading course on approval.
- 19.650 Theory of Wages and Profits (3)** History of wage and profit doctrines. The marginal productivity theory of wages. Alternative profit theories. Interactions between wages and profits and national income.
- 19.651 Structure of the Labor Market (3)** Application of economic principles to the analysis of labor markets. Case studies and statistical relationships. Effects of unionism. Occasional and as reading course on approval.
- 19.652 Protective Labor Legislation (3)** Federal, state legislation on wages and hours, legislation affecting the labor supply, regulation of working conditions. Occasional and as reading course on approval.

Seminars

- 19.708 Seminar in Business Economics (3)** Advanced study of the application of economics to particular problems of business management. Lectures, discussion and research.
- 19.710 Seminar in Economic Theory I (3)** Advanced analysis of problems in the theory of value and distribution, welfare economics, the theory of economic development. Discussion and supervised research. *Prerequisite, permission of instructor.*
- 19.711 Seminar in Economic Theory II (3)** Advanced analysis of problems in the theory of employment and income, dynamic economics, business fluctuations. Discussion and supervised research. *Prerequisite, permission of instructor.*
- 19.712 Seminar in Research Methods and Applications (3)** Use of research techniques in the study of particular economic problems. Lectures, discussion, research projects.
- 19.713 Seminar in National Economic Policy (3)** Economic aspects of leading problems in public policy. Lectures, discussion, research.
- 19.780 Seminar in International Finance (3)** Current trends; operation of international financial agencies; recovery programs. *Prerequisite, permission of instructor.*
- 19.789 Seminar in Economic Development (3)** Advanced study of the problems of under-developed countries. Lectures, discussion and research. Comparative analysis of economic and cultural characteristics related to growth.
- 19.799 Thesis Seminar in Economics (3-6)**

History

Professors: ERNEST CORRELL; HAROLD E. DAVIS; DONALD DERBY; ARTHUR A. EKIRCH, JR.; DOROTHY D. GONDOS; ERNEST POSNER (Chairman). *Associate Professor:* DAVID J. BRANDENBURG. *Assistant Professor:* ALBERT D. MOTT. *Instructor:* ERNEST F. DRIBBLE. *Adjunct Professors:* SOLON J. BUCK; LOUIS C. HUNTER; KERIM K. KEY. *Professorial Lecturers:* DONALD M. DOZER; FRITZ T. EPSTEIN; ARTHUR W. HUMMEL; STANLEY NEHMER. *Lecturers:* ELLEN F. BODMAN; HERBERT BODMAN; MARY JANE P. DAY; MARY R. DEARING; F. G. EYCK; GRACE E. FOX; WILLIAM E. FOX; DOROTHY GOODMAN; LEON GOURE; IRVING I. KRAMER; EDITH LOWRY; JOHN MILLER; WAYNE D. RASMUSSEN; HOWARD M. SMYTH.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Arts.

University Requirements 38-43 hours

ASSOCIATE IN ARTS

Major courses 18 hours

3 hours selected from the following: 29.500 Historical Research: Materials and Methods, 29.501 History of Historical Writing, 29.503 Historical Writing in the U.S., or 29.504 Philosophy of History; and 15 additional hours including at least 9 hours in one of the following fields: U.S. history, European history, Latin American history, economic history, and history of government.

BACHELOR OF ARTS

Major courses 30 hours

6 hours of survey courses in American or European history; 3 hours selected from the following courses: 29.500 Historical Research: Materials and Methods, 29.501 History of Historical Writing, 29.503 Historical Writing in the U.S., or 29.504 Philosophy of History; 29.492 Senior Undergraduate Seminar (3); and 12 additional hours including at least 9 hours in one of the following fields: U.S. history, Latin American history, European history, economic history, and history of government.

Related courses 18-24 hours

6 hours in the humanities (for which foreign language may be substituted) and 18 hours in advanced humanities or social sciences.

Tool courses 0-6 hours

6 hours in a foreign language may be substituted for 6 hours of work in related courses.

Electives:

ASSOCIATE IN ARTSto complete 63 hours

BACHELOR OF ARTSto complete 126 hours

GRADUATE DEGREES—Master of Arts, Doctor of Philosophy.

MASTER OF ARTS

Course Requirements: Minimum of 30 hours of approved graduate work, 6 of which may be in 29.799 Thesis Seminar in History (3-6).

Written Comprehensive Examinations: 3, including one in the general history of Europe, the U.S., or Latin America; one in the history of a particular nation or area, a specialized period of history, or a special phase in the history of a nation, area, period, or aspect of history; and one in a related field of the humanities or social sciences.

Other Requirements: Thesis.

Course Requirements: Minimum of 72 hours of approved graduate work, at least 30 of which must be completed in residence at The American University.

Written Comprehensive Examinations: 5, including two in the general history of two of the following: Europe, the U.S., and Latin America; two in the history of particular nations or areas, specialized periods of history, or a special phase in the history of a nation, area, period, or aspect of history; and one in a related field of the humanities or social sciences.

Other Requirements: Proficiency examinations in two tools of research (languages or an approved substitute), thesis and oral examination on thesis.

UNDERGRADUATE COURSES

- 29.100 Backgrounds of Civilization I (3)** Introduction to historical studies. The U. S. as a phase of western civilization. Expansion of Europe; economic and social background; man and the state.
- 29.101 Backgrounds of Civilization II (3)** The U. S. studied with reference to religious history, the growth and implications of modern thought, science, technology, and the quest for world order. *Prerequisite*, 29.100.
- 29.200 Civilization in the Americas: I National Origins (3)** Origin and development of the U. S., Canada, and the nations of Latin America to 1825. Western hemisphere considered as a unit with common historical background. 1957.
- 29.201 Civilization in the Americas: II National Development (3)** Growth and development of the American nations since 1825. Inter-American relations and the Pan American movement. The Americas in recent world affairs.
- 29.310 The Ancient World (3)** Origin and nature of early near-eastern and Greek cultures. Economic, social, political, military, administrative history of the Roman world.
- 29.311 Medieval Europe (3)** Formative period of European civilization. Transition of social life and political institutions from the Roman Empire to the age of European discovery and exploration.
- 29.312 History of Europe I (3)** Nature, causes, social consequences of the Reformation. Catholic Counter-Reformation. Evolution of political ideologies and institutions. Expansion of commerce and the growth of empires. French Revolution.
- 29.313 History of Europe II (3)** Development of European nationalities from 1815 to 1914. Metternich reaction, rise of liberalism, industrial revolution, and social, cultural, and economic bases of nationalism and imperialism.
- 29.320 History of England I (3)** Political, economic, social, and cultural life in England to 1689. Origins and development of constitutional government. Beginnings of empire. Correlation with pre-law studies and English literature.
- 29.321 History of England II (3)** England and the British Empire since 1689. Evolution of constitutional government, expansion of empire, the empire system since World War II. Correlation with pre-law studies and English literature.
- 29.330 Introduction to Chinese Civilization (3)** Survey of Chinese civilization from beginnings to modern times. Emphasis on cultural, political, social aspects and on relations between China and the western world.
- 29.400 History of the U. S. I (3)** Survey course giving a comprehensive history of our country from colonial times to the Civil War.
- 29.401 History of the U. S. II (3)** Survey course covering period from the Civil War to the present.
- 29.442 American Biographies (3)** Lives of personalities representative of the periods and problems of American history. Discussions and lectures on backgrounds of issues symbolized by individuals studied.
- 29.443 Social History of the U. S. I (3)** Social factors in U. S. history from colonial times to the Civil War. Emphasis upon the family, labor, immigration, slavery, religion, the westward movement.

- 29.444 Social History of the U. S. II (3)** Analysis of American society since the Civil War with special attention to social classes and ethnic groups, urbanization, industrialism, technology, the social gospel, popular recreation.
- 29.492 Senior Undergraduate Seminar (3)**

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

Historiography and Methods of Research

- 29.500 Historical Research: Materials and Methods (3)** Critical use of materials available for research in modern history. Techniques, methods of inquiry, evaluation of materials, and types and styles of historical writing.
- 29.501 History of Historical Writing (3)** Development of historiography from the period of the Renaissance. Trends in historical thinking, research, and writing. Discussion of representative historical works.
- 29.503 Historical Writing in the U. S. (3)** Analysis of historical writing in the U. S. from colonial times. Attention to prominent historians and trends in historical thinking and interpretation.
- 29.504 Philosophy of History (3)** Contemporary issues in the philosophy of history with special attention to problems of meaning and structure in the historical process, considered in the light of their historical roots.
- 29.509 Genealogical Research: Materials and Methods (3)** Principles and methods of genealogical research and the practical use of genealogical materials in the National Archives and other depositories in or near Washington.
- 31.530 Institute of Genealogical Research (3)**

Europe, Asia, Africa

- 29.510 Renaissance and Reformation (3)** Political and social history of Europe from the 15th century to 1648. Transition of Europe from medieval to modern times; impact of explorations and the Reformation. Rise of capitalism.
- 29.511 French Revolution and Napoleon (3)** European history from 1789 to 1815. Significant aspects of the French Revolution, the Napoleonic Empire, and the Congress of Vienna.
- 29.512 History of Europe: 1870 to 1914 (3)** Political, economic, and cultural effects of nationalism, imperialism, and industrialization in Europe. National developments and international alliances. Background of World War I.
- 29.513 Europe Since 1914 (3)** Political, social, and economic developments in Europe from the beginning of World War I through World War II.
- 29.514 Modern Revolutions (3)** Theory of revolutionary movements and the form and structure of revolution as exemplified in the Puritan, American, French, and Russian revolutions.
- 29.515 Expansion of Europe (3)** Oversea expansion of European countries from the 15th through the 19th centuries. Influence of colonial and imperialistic expansion in shaping recent history.
- 29.516 Economic History of Modern Europe I (3)** European economy from medieval times through the 18th century. Origins and growth of capitalism. Industrialism, colonialism; public credit and private finance; formation of national economies.
- 29.517 Economic History of Modern Europe II (3)** Economic aspects of European industrial, national, and colonial development since the 18th century.
- 29.519 Diplomatic History of Europe, 1815-1914 (3)** From the Congress of Vienna to the beginning of World War I. Special attention to emergence and effects of nationalism.
- 29.520 English Constitutional History (3)** Development of English political institutions, practices, ideas. Emphasis on evolution of representative traditions rather than on political narrative.
- 29.525 France: Empire to Fourth Republic (3)** Collapse of Second Empire. Formation of the Third Republic and its course to 1940. Vichy interlude and Fourth Republic. Reading knowledge of French desirable.

- 29.528 Germany Since 1870 (3)** German History from the Bismarck era to the downfall of the Nazi regime.
- 29.530 History of Czarist Russia (3)** Expansion of Russia from the Muscovite principality to the empire of the 20th century. Development of institutions and culture.
- 29.531 Russia Since 1917 (3)** Soviet Union from the October revolution to the death of Stalin. Emphasis on internal political, socio-economic, and cultural developments.
- 29.532 History of East and Central Europe (3)** East Central Europe (Finland, the Baltic States, Poland, Czechoslovakia, and Hungary) under Russian, Prussian and Austrian domination. The independent States in the Post World War I period.
- 29.533 History of the Balkans and Turkey (3)** Historical backgrounds. Period of Turkish domination. Rise of nationalism in the Balkans. Great Power diplomacy and the partition of Turkey. Recent developments.
- 29.535 History of the Far East (3)** Historical backgrounds; invasion of western influence; conflict of national interests; economic and cultural systems; Asiatic consciousness and world organization.
- 29.536 History of Africa (3)** History of the African continent during the modern period. European colonization and competition; internal economic, social, and political developments; emerging African nationalism.
- 29.537 History of the Middle East (3)** Survey from earliest times to the present. Special emphasis on political, economic, cultural developments in Turkey, Iran, Afghanistan, the Arab States, Israel.
- 29.538 History of China Since the Ming Dynasty (3)** Political and social institutions; schools of thought; legal and moral concepts; literary, artistic and intellectual developments; elements of stability and change; international contacts to recent times.
- 29.539 History of Japan: 1600 to the Present (3)** Historical background; period of seclusion; restoration of a centralized monarchy; economic and political developments; establishment of an empire; World War II and post-war period.
- 29.610 Intellectual History of Europe Through the Enlightenment (3)** Ideas and outlooks that have influenced the development of western history from the 13th century to the eve of the French Revolution.
- 29.611 Intellectual History of Europe From the French Revolution (3)** Cultural and intellectual currents from the end of the 18th century. Rise of the romantic movement; impact of revolutionary ideas, science, and industrial technology.

United States

- 29.540 Colonial Origins of the U. S. (3)** European backgrounds. Conflict of rival colonial systems. Political, economic, and social developments within the colonies. Causes and development of revolt.
- 29.541 Era of the American Revolution (3)** Survey of colonial backgrounds. Origins and development of the American Revolution. Drafting and establishment of the Constitution of the U. S.
- 29.542 Development and Disruption of the Federal Union (3)** The U. S. from 1789 to 1861. Social and political implications of the Jeffersonian and Jacksonian reform movements of the period. Growth of sectionalism.
- 29.543 Civil War and Reconstruction (3)** Causes and course of the war; its impact on national life. Problems and effects of reconstruction. Industrialization and urbanization. Social and economic forces.
- 29.544 The U.S. in the 20th Century (3)** Era of Theodore Roosevelt. Emergence of the U. S. as a world power. The New Deal. The U. S. in two world wars.
- 29.545 The South in U. S. History (3)** Colonial times to the present. Factors making the south a distinctive part of the American nation.
- 29.546 The Frontier in U. S. History (3)** Westward expansion from colonial times to the close of the 19th century. Analysis of Turner's frontier hypothesis in the light of recent critical literature.
- 29.547 History of U. S. Foreign Policy (3)** Historical treatment and critical examination of the role of the U. S. in world affairs.

- 29.548 **American Economic History I (3)** Review of American economic development from the colonial beginnings to the mid-19th century.
- 29.549 **American Economic History II (3)** Review of American economic development during the past one hundred years.
- 29.550 **History of Industry in the U. S. (3)** American industrial development from the end of the 18th century to the present. Structural and organizational aspects, location trends, technology, and distribution.
- 29.551 **History of Agriculture in the U. S. (3)** Agrarian settlement and land policies, history and significance of farm implements and machinery; agricultural development by regions and commodities.
- 29.553 **History of American Business Leadership (3)** The business heritage: studies in American business history for students with strong background in Business Administration, Economics or American History.
- 29.640 **Intellectual History of the U. S. I (3)** Ideas and attitudes of the American people and their leaders from colonial times to the Civil War. Puritanism, the enlightenment, transcendentalism, democracy, and nationalism.
- 29.641 **Intellectual History of the U. S. II (3)** Dominant patterns of American thought from the Civil War to the present. Impact of Darwinian evolution, industrialism, the vanishing frontier, progressive democracy, imperialism, and war.
- 29.642 **Concept of American Nationalism (3)** Origin and development of nationalism with attention to manifest destiny, cultural nationalism, patriotism, and world-mindedness.
- 29.643 **U. S. Expansion Abroad (3)** Political and economic expansion of the U. S. in key areas such as Latin America and the Pacific. Ideological impact of American civilization in all parts of the world.

The Other Americas

- 29.570 **Colonial Origins of Latin American Nations (3)** Colonization by Spain, Portugal, and France. Causes and developments of independence movements. 1959
- 29.571 **Growth of Latin American Nationalism (3)** History of Latin America from independence to the end of the 19th century. Constitutional, sociological, economic, and ideological aspects of national development.
- 29.572 **Latin America in the 20th Century (3)** Movements of economic nationalism. Agrarian, electoral, and educational reform. Militarism: cultural, ideological, and religious developments.
- 29.573 **Latin American Social and Political Thought (3)** Spanish and Portuguese backgrounds. Ideas of the independence leaders. Mid-century liberalism and romanticism. Positivist thought. Contemporary trends.
- 29.574 **History of Canada (3)** National development from colonial origins to the achievement of dominion status. Westward expansion. Relations with the U. S., the Commonwealth of Nations, and the United Nations.

Seminars

- 29.710 **Research Seminar in European History (3)**
- 29.740 **Research Seminar in the History of the U. S. (3)**
- 29.799 **Thesis Seminar in History (3-6)**

INTERNATIONAL RELATIONS

For degree programs in International Relations see the Political Science degree requirements in the College of Arts and Sciences (p. 101) or the *School of International Service Bulletin*.

Political Science

A general major in political science is offered in the College of Arts and Sciences in cooperation with the faculties of the School of Government and Public Administration and the School of International Service. For course listings and requirements of other degrees in this field see the bulletins of these other schools. The requirements for the Bachelor of Arts in Political Science in the College of Arts and Sciences are as follows:

<i>University Requirements</i>	38-43 hours
Major courses	36 hours
Selected from three of the following fields under the direction of an advisor: International Relations, Public Law, Governmental Processes, Comparative Government and Politics, Public Administration, Political Dynamics, or Political Theory.	
Related courses	15 hours
At least 12 hours from courses beyond the introductory level selected in consultation with the advisor.	
<i>Electives</i>	to complete 126 hours



Psychology

Professors: JOHN E. BENTLEY; CHARLES K. TRUEBLOOD (Chairman); ELLIS WEITZMAN. *Assistant Professors:* DAVID J. KING; CHARLES W. VAN WAY, JR. *Adjunct Professors:* JOHN L. ENDACOTT; JOSEPH SAMLER; MELVIN R. MARKS; GODFREY M. HOCHBAUM. *Professorial Lecturers:* JOHN C. BALLOCH; SEYMOUR BEARDSLEY; HARRY BORNSTEIN; ALBERT C. CORNSWEET; EDMUND N. FULKER; REUBEN S. HORLICK; ARTHUR KIRACOFÉ; GORDON L. LIPPITT; JULIUS PETERS; E. LAKIN PHILLIPS; ERNEST S. PRIMOFF. *Lecturers:* NORMA BIRD; THELMA DREIS; ISAAC FRANCK; G. W. LAUTROP, JR.; HOWARD LEVENTHAL; JOHN P. MUNDY; EVELINE SCHULMAN; BERTRAM W. STRAUSS; JOHN W. SUTTON.

Degree Programs

UNDERGRADUATE DEGREES—Bachelor of Arts. The Department does not offer the Associate Degree with a major in psychology. This degree may be taken with a major in general education, however, with direction by a counselor in psychology.

University Requirements 38-43 hours
Students majoring in psychology should complete 57.200 General Psychology (3) as a part of their University requirements.

Departmental Requirements:

Major courses	29 hours
57.300-301 Experimental Psychology I and II (8), and 21 additional hours of courses at the 300-500 level, selected in consultation with a counselor in psychology.	
Related courses	12 hours
Advanced work in the social or natural sciences, with not more than 9 hours in one.	
Tool courses	6 hours
69.200 Fundamentals of Statistics (3); 69.301 Intermediate Statistics (3). Students planning to continue the study of psychology at the graduate level should include at least one foreign language in their undergraduate programs.	

Electivesto complete 126 hours

GRADUATE DEGREES—Master of Arts in psychology and in guidance and counseling, Doctor of Philosophy in social psychology.

MASTER OF ARTS DEGREE

Students must perform acceptably on the General Aptitude Test and the Advanced Test in Psychology of the Graduate Record Examinations, as a condition of advancement to candidacy for the degree.

Course Requirements: Minimum of 30 hours of approved graduate work, including 6 hours in 57.799 Thesis Seminar in Psychology (3-6).

Written Comprehensive Examinations: For the degree in psychology—3, including one in general psychology; one in a specialized field in psychology, such as social psychology, personality, measurement techniques, psychological and educational measurements, personnel psychology, developmental psychology, or counseling psychology; and one in another specialized field of psychology or in a related field. For the degree in counseling and guidance—3, including one in counseling psychology, one in psychological and educational measurements, and one in another specialized field of psychology or in a field of education.

Other Requirements: Thesis.

Course Requirements: Minimum of 72 hours of approved graduate work, at least 30 of which must be completed at The American University.

Written Comprehensive Examinations: 5, including one in general psychology; one in social psychology; and three in specialized fields of psychology such as personality, measurement techniques, personnel psychology, developmental psychology, counseling psychology, or a related field.

Other Requirements: Acceptable performance on Graduate Record Examinations, as a condition of advancement to candidacy; proficiency examination in 2 research tools (languages or statistics); thesis, and oral examination on thesis.

UNDERGRADUATE COURSES

- 57.010 Improvement of Reading (0)** Practical approach to the improvement of reading efficiency through supervised individual and group practice during class periods. Diagnosis of individual reading habits. Laboratory fee, all students, \$8.
- 57.200 General Psychology (3)** Psychological nature of the individual and the influences which affect human development and human action. Prerequisite to other offerings in the department.
- 57.300 Experimental Psychology: Receptive Processes I (4)** Experimental study of psychological bases of behavior and the receptive processes: vision, audition, other senses. Required of students majoring in psychology. *Prerequisite*, 69.200 *Fundamentals of Statistics*.
- 57.301 Experimental Psychology: Behavior Processes II (4)** Experimental study of learning, perception, memory, emotion, thinking. Required of students majoring in psychology. *Prerequisite*, 57.300.
- 57.305 Group Dynamics and Administrative Principles (3)** Systematic laboratory study of major characteristics and functions of face-to-face groups: cohesiveness, goal-setting, decision-making, styles of leadership, membership-roles.
- 57.307 Mental Hygiene (3)** Relationships between self-acceptance, self-respect, emotional health. Adjustment processes in everyday living, with emphasis on bringing unconscious motivation into awareness.
- 57.400 Psychology of the Child (3)** Growth through infancy and childhood, with emphasis on emotional behavior, intelligence, learning, social development.
- 57.401 Psychology of the Adolescent (3)** Physical, mental, social growth of the adolescent, with special consideration of the psychological bases of adolescent behavior.
- 57.402 Introduction to Counseling Psychology (3)** Basic principles and methods used in educational, vocational, personal counseling.
- 57.403 Historical Introduction to Modern Psychology (3)** Historical background and development of present-day systematic points of view in psychology. *Prerequisite*, one year of psychology.
- 57.404 Introduction to Social Psychology (3)** Influence of group structure and dynamics on psychological development of the individual. Social environment in relation to individual adjustment.
- 57.410 Psychology for Law Enforcement Officers (3)** Applications of basic psychological principles to problems of modern law enforcement.

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

- 57.500 Advanced General Psychology (3)** Critical overview of major problems, methods, research findings in psychology. Basic course for all students interested in further work in psychology. *Prerequisite*, one year of work in psychology or permission of the instructor.

- 57.501 **Advanced Experimental Psychology I (3)** Principles and formulation of research design, with emphasis on social-psychological investigation. Identification of research problems, formulation of hypotheses, choice of methods, interpretation and reporting of results. *Prerequisite, permission of the department.*
- 57.502 **Advanced Experimental Psychology II (3)** Continuation of 57.501 with emphasis on individual projects and the professional problems of the psychologist. *Prerequisite, permission of the department.*
- 57.503 **Theoretical Systems of Psychology (3)** Conceptual systems of psychology, involving consciousness, function, behavior, purpose, dynamism, gestalt, as they appear in the history of psychological thought. *Prerequisite, one year of work in psychology or permission of the instructor.*
- 57.504 **Psychological and Educational Measurements I (3)** Use and interpretation, theoretical and historical background of group tests of achievement and intelligence. *Prerequisite, one year in psychology or education and 69.200 Fundamentals of Statistics or equivalent.* Laboratory fee, all students, \$2.
- 57.505 **Psychological and Educational Measurements II (3)** Theoretical background and rationale of interest inventories, personality scales, and tests of special aptitude (such as art, law, mechanical aptitude, etc.). Test batteries and their application. May be taken independently of 57.504. *Prerequisite, one year of psychology or education and 69.200 Fundamentals of Statistics.* Laboratory fee, all students, \$2.
- 57.506 **Psychological and Educational Measurements III (3)** Laboratory practice in the administration, scoring, interpretation of representative tests of intelligence that require individual administration. Laboratory fee, all students, \$5. *Prerequisite, permission of department.* Enrolment limited.
- 57.507 **Psychology of the Exceptional Child (3)** Characteristics of deviant children: the feeble-minded and the gifted; the hard of hearing and the deaf; the blinded and the blind; the emotionally disturbed.
- 57.508 **Psychology of the Adult (3)** Critical survey of principles and research studies relating to the behavior of mature individuals. Psychological needs, group behavior, occupational fitness of adults.
- 57.509 **Motivation and Personality (3)** Introduction to theories concerning motives as causes of human behavior, and personality as the organization of psychological processes and states. *Prerequisite, one year of psychology or permission of department.*
- 57.510 **Projective Techniques in Psychology (3)** Examination of the theoretical bases of the projective techniques. Introduction to the principal projective methods used in the study of personality.
- 57.511 **Psychology of Developmental Reading (3)** Principles, and practices of developmental reading. For reading specialists, teachers, and training officers who conduct developmental reading courses in high school, college, or adult education.
- 57.515 **Dynamics of Group Behavior—Fundamentals (3)** Interpersonal relations in group situations. Causal factors in group functioning. Functional roles of individuals in groups. Sociometric factors in group structure.
- 57.520 **Behavior Problems in Childhood (3)** Psychological bases for normal and deviate behavior in children. Childhood problems from the standpoint of the psychologist.
- 57.521 **Behavior Problems in Adolescence (3)** Psychological bases for normal and deviate behavior in adolescence. Adolescent problems from the standpoint of the psychologist.
- 57.523 **Psychology of Personality (3)** Development of wholesome personality. Individual traits, individual differences, modification of behavior patterns in personality; critical evaluation of research. Theories of personality.
- 57.524 **Abnormal Psychology (3)** Deviations from normal behavior. Neurotic, psychotic, psychopathic personality. Disorders of sensation, perception, memory, motor control. Functional mental disorders. Principles of psychotherapy.

- 57.525 Physiological Psychology (3)** Neuro-physiological, endocrinological, and motor bases of action and learning. Lectures supplemented by demonstrations of brain and microscopic preparations.
- 57.526 Industrial Psychology (3)** Selection, training, and supervision of workers in industry. Motives and job adjustment of the worker. Human engineering. Social psychology of industry.
- 57.530 Social and Psychological Aspects of International Relations I (3)** International phenomena, such as war and peace, in the light of anthropological, psychological, sociological theory and research findings.
- 57.531 Social and Psychological Aspects of International Relations II (3)** Analysis of major types of international program from the psychological and social science point of view: information programs, exchange of persons, economic development, technical assistance, UNESCO. *Prerequisite, 57.530 or permission.*
- 57.532 Social and Psychological Aspects of Intergroup Tensions (3)** The psychological nature of intergroup prejudice, and its relation to other aspects of personality and behavior. Recent research on the determinants of intergroup attitudes. Techniques for the reduction of intergroup tension.
- 57.572 Principles and Practices of Guidance (3)** Principles and methods of counseling in elementary and secondary schools. Organization, utilization of information as related to the pupil. Basic course for teachers and school administrators; beginning course for counselors.
- 57.574 Understanding the Individual (3)** Development, organization, analysis of data related to the individual. Critical analysis of research related to interpretation of data about the individual. *Prerequisite, one course in psychological or educational measurement.*
- 57.575 Psychology of the Handicapped (3)** Psychology of the mentally and physically handicapped. Emotional, social problems and adjustment. Use, interpretation of psychological tests in the appraisal of the handicapped.
- 57.576 Marriage and Family Counseling (3)** Development and present scope of marriage and family counseling. Role of the interview and use of psychological tests. Techniques of role playing and group therapy.
- 57.600 Clinical Psychology (3)** Survey of clinical methods. Description, psychopathology, therapy of behavior disorders. Lectures supplemented by presentations of appropriate types of patients. *Prerequisite, 57.524.*
- 57.601 Rorschach Interpretation (3)** Analysis of scoring problems, and supervised practice in the interpretation of typical Rorschach records, child and adult. *Prerequisite, 57.510 or equivalent.*
- 57.604 Advanced Social Psychology (3)** Psychological factors in human social behavior. Social aspects of perception, motivation, thinking, language, attitudes. Public opinion, propaganda, prejudice, intergroup tensions. *Prerequisite, permission of the department.*
- 57.605 Dynamics of Group Behavior: Theory and Research (3)** Critical survey of the concepts, research findings, theory basic to the field of group dynamics.
- 57.606 Problems in Test Construction (3)** Preparation, use, evaluation of educational, personnel, attitude measurements. *Prerequisites, 57.504 and 69.200 Fundamentals of Statistics.*
- 57.670 Techniques of Counseling (3)** Methods of counseling pupils on problems of personality development, school progress, educational and occupational choice. *Prerequisite, 57.574 or permission of the instructor.*
- 57.691 Practicum Training (3)** Practice, under qualified supervision, in public or volunteer agencies, in technical procedures related to testing, therapy, similar activities of the professional psychologist.
- 57.771 Seminar in Counseling (3)** Critical analysis of problems of counselors. Special reference to employment services of publicly supported employment agencies, schools, guidance centers.
- 57.798 Seminar in Psychology (3)** Directed research, reports, discussion on selected problems in various fields of psychology.
- 57.799 Thesis Seminar in Psychology (3-6)**

Sociology and Anthropology

Professors: ERNST CORRELL; FRANK LORIMER; HARVEY C. MOORE; AUSTIN VAN DER SLICE (Chairman). *Assistant Professor:* JOHN C. SCOTT, JR. *Adjunct Professors:* ROBERT T. BOWER; EWAN CLAGUE; LAWRENCE KRADER; COURTLANDT C. VAN VECHTEN; OSCAR WEIGERT. *Professorial Lecturers:* DONALD CLEMMER; HAROLD F. DORN; JAMES H. FOX; CLARK TIBBITTS; CAROLINE F. WARE. *Lecturers:* STANLEY K. BIGMAN; ISMAEL SILVA-FUENZALIDA; IVOR WAYNE; AND KENNETT YEAGER.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Arts.

University Requirements38-43 hours

Students majoring in sociology should complete 57.200 General Psychology (3), 65.200 Introduction to Sociology (3), and 65.201 Introduction to Anthropology (3) as a part of their University requirements.

Departmental Requirements:

ASSOCIATE IN ARTS

Major courses 18 hours

BACHELOR OF ARTS

Major courses 24 hours

65.420 Introduction to Research Methods (3), 65.410 Sociological Theory (3), and 18 additional hours in courses at the .300-.500 level in the following areas: social organization, anthropology, sociological theory, population and ecology, and applied sociology.

Related courses 18 hours

At least 12 hours must be in one field.

Tool courses 3 hours

69.200 Business Statistics (3). Students planning to continue the study of sociology or anthropology at the graduate level should include 69.301 Intermediate Statistics (3) and at least one foreign language in their undergraduate program.

Electives:

ASSOCIATE IN ARTSto complete 63 hours

BACHELOR OF ARTSto complete 126 hours

GRADUATE DEGREES—Master of Arts, Doctor of Philosophy.

MASTER OF ARTS IN ANTHROPOLOGY

Course Requirements: Minimum of 30 hours of approved graduate work, including 65.799 Thesis Seminar in Anthropology (3-6).

Written Comprehensive Examinations: 3, including one in the general history of anthropological theory and method; one in a specialized field of anthropology such as ethnology and social anthropology, ethnography, linguistics, the archeology of two selected areas of the Old World or New World, or physical anthropology; and one related field.

Other Requirements: Thesis and oral examination on thesis.

MASTER OF ARTS IN SOCIOLOGY

Course Requirements: Minimum of 30 hours of approved graduate work, 6 of which may be in 65.799 Thesis Seminar in Sociology (3-6).

Written Comprehensive Examinations: 3, including one in sociological theory; one in methods of social research; and one selected from the fields of anthropology, population studies, social psychology, certain other specialized areas in sociology, or a related social science.

Other Requirements: Thesis and oral examination on thesis.

DOCTOR OF PHILOSOPHY IN SOCIOLOGY

Course Requirements: Minimum of 72 hours of approved graduate work, 30 of which must be taken in residence at The American University.

Written Comprehensive Examinations: 5, including one in sociological theory; one in methods of social research; and 3 selected from the fields of anthropology, population studies, social psychology, certain other specialized areas in sociology, or a related social science.

Other Requirements: Proficiency examinations in two tools of research (French, German, another modern language, or statistics); dissertation and oral examination on dissertation.

UNDERGRADUATE COURSES

- 65.110 Human Behavior I (3)** Basic principles and tools of analysis in the behavioral sciences related to the international setting. The role of culture, social system, and personality in international relations. *Note: Students electing this sequence of 12 credit hours may not receive credit for 57.200, 57.404, 65.200, or 65.201.*
- 65.111 Human Behavior II (3)** A continuation of Human Behavior I. *Prerequisite, 65.110.*
- 65.200 Introduction to Sociology (3)** Fundamental characteristics of social relationships. Culture, personality, population and ecology, social institutions and processes, cultural change.
- 65.201 Introduction to Anthropology (3)** Introduction to the comparative study of cultural content, form, process, social structure. Contributions of ethnology to the understanding of modern life.
- 65.210 Human Behavior III (3)** Application of behavioral science techniques to understanding and analysis of international and cross-cultural relations. Cultural universals and alternatives, motivation, cultural change and culture conflict. *Prerequisite, 65.111.*
- 65.211 Human Behavior IV (3)** A continuation of Human Behavior III. *Prerequisite, 65.210.*
- 65.330 Human Origins (3)** Man's physical nature: origins, expression in race, inter-relationships with socio-cultural factors. Principles of archeological research. Early culture and its contributions to contemporary practices. *Prerequisite, 65.201.*
- 65.335 The North American Indian (3)** Survey of the Indians of America north of Mexico: origins, languages, modes of life, history. Results of European conquest. *Prerequisite, 65.201.*
- 65.340 The Family (3)** Varying forms and functions of family organization in different societies. Evolution of American family patterns. Family relations and personality formation. Contemporary social changes influencing family life. *Prerequisite, 65.200.*
- 65.345 American Society (3)** An analysis of contemporary American social institutions. The American social system in historical perspective, value systems, ethnic composition, formal and informal structures.

- 65.352 Human Ecology (3)** Relation of environment to distribution of population and to social structure and culture.
- 65.361 Social Disorganization (3)** Analysis of social problems created by technical and cultural change. Effect of migration on community structure. Social background of personal maladjustment. Processes of social reorganization. *Prerequisite*, 65.200.
- 65.365 Introduction to Social Work (3)** Development of social welfare philosophy and practices. The areas of social work, group work, and community organization for public welfare. Community resources. Visits to selected agencies.
- 65.410 Sociological Theory (3)** Historical background of the theories, concepts and methods of sociology, emergence and characteristics of the most significant sociological systems.
- 65.415 Law and the Social Order (3)** Functions of law in society. Social origins and development of political authority around human rights. Contemporary manifestations of governmental authority in the modern democratic state.
- 65.420 Introduction to Research Methods (3)** Introduction to the nature, methods, principles and techniques of scientific social research. Critical review of types of investigations, with accent on field research. *Prerequisite*, 69.200.
- 65.430 Primitive Religions (3)** Varieties of religious experiences and expressions, exclusive of the great world religions. Role of religion in influencing behavior and in integrating particular societies, cultures. *Prerequisite*, 65.201.
- 65.431 Primitive Political Systems (3)** Study of control and authority in a variety of primitive peoples, with emphasis on the more complex primitive societies. *Prerequisite*, 65.201.
- 65.450 Population (3)** Survey of world population trends. Introduction to methods of analysis. Determinants and consequences of variations in fertility, mortality, and migration.

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

Sociological Theory

- 65.510 Concepts of Sociology (3)** Systematic survey, critical analysis of sociological concepts. Emphasis on theoretical systems. *Prerequisite*, 65.200.
- 65.610 History of Sociological Theory I (3)** Comparative study of major schools of sociological theory in France, Great Britain, United States. *Prerequisite, permission of the instructor.*
- 65.611 History of Sociological Theory II (3)** Comparative study of major schools of sociological theory in Germany, Austria, Italy. *Prerequisite, permission of the instructor.*
- 65.711 Sociological Theory: Seminar (3)** Intensive study of selected area or school of sociological thought. Emphasis on research in source materials. *Prerequisite, permission of the instructor.*

Social Research

- 65.511 Theory of Social Research (3)** Critical analysis of the logical and methodological problems of social investigation. The theoretical orientation of logically distinct approaches to sociological research.
- 65.512 Social Research Methods I (3)** Research procedures in sociology with emphasis on survey design, collection of quantitative data. *Prerequisite*, 69.200.
- 65.513 Social Research Methods II (3)** Research procedures in sociology with emphasis on analysis of quantitative data. *Prerequisite*, 65.512.
- 65.515 Attitude Measurement and Research (3)** Examination of various means of measuring attitudes and analyzing survey data. Actual empirical field work in opinion and attitude research studied. Emphasis on research methods. *Prerequisite*, 65.512.



Downtown Center

- 65.691 In-Service Training Project (3-6)** Research project for limited number of qualified students working in government or private organizations in areas related to their degree program. Project under supervision of faculty and organization concerned.
- 65.712 Seminar in Sociology (3)** Preparation and critical discussion of research papers on substantive and theoretical problems in sociology. May be repeated for credit. *Prerequisite, permission of the instructor.*
- 65.799 Thesis Seminar in Sociology (3-6)**

Anthropology

- 65.530 Theory and Methods of Cultural Anthropology (3)** Anthropological theories of culture and society: their history, present status, influences. Methods pertinent to the theories. *Prerequisite, 65.201.*
- 65.531 Comparative Social Organization (3)** Anthropological approach to the comparative study of selected societies and varieties of social structure. *Prerequisite, 65.201.*
- 65.532 Processes of Culture (3)** Dynamics of culture. Growth, development, stability in culture content, form, organization. Acculturation and nativistic movements. Assimilation and integration of ethnic groups. *Prerequisite, 65.201.*
- 65.534 Cultural Analysis (3)** An anthropological approach to an understanding of problems of cross-cultural relations and of individual adjustment to and appreciation of societies with different cultures.
- 65.535 Cultural Influences Upon the Individual (3)** Examination of anthropological studies concerning personality. Influences of culture upon the thoughts and actions of the individual and the resulting cultural patterns and configurations.
- 65.537 Language and Culture (3)** Cross-cultural consideration of language structure and behavior in relation to the rest of culture and to problems of culture pattern and change. *Prerequisite, 65.201.*
- 65.538 Applied Anthropology (3)** Applications of concepts, approaches in anthropology to selected problems in government administration, industry, medicine and public health, technical assistance programs. *Prerequisite, 65.201.*
- 65.539 Culture Area Analysis (3)** A selected culture area will be analyzed in terms of process, function, structure and development. *Prerequisite, 65.201.* May be repeated for credit if different areas are selected.
- 65.798 Thesis Seminar in Anthropology. (3-6).**

Social Organization

- 65.514 Social Aspects of Mass Communication (3)** Communication of ideas in modern society. Special attention to current empirical research on mass media in relation to sociological theory.
- 65.540 Social Organization (3)** The social structure emphasizing the nature, functioning, integration of social institutions; types of organizations: family, clique, voluntary association, work, bureaucracy, community; social differentiation and stratification.
- 65.542 Sociology of Political Action (3)** Critical evaluation of recent theories of political sociology. Motivation in political behavior. Application of concepts of group participation from functional sociology and psychology. *Prerequisite, 65.200 and 53.200, American Government: National.*
- 65.545 Contemporary Communities (3)** Analysis and comparison of the social and political structures and ideologies of contemporary communities of the world, stressing American community types. Approaches to community research.
- 65.546 Collective Behavior (3)** Analysis of crowd, mass, public behavior. Relationship to social movements of modern times. Role of leadership in various types of collective behavior. Factors, processes in emergence of social order. *Prerequisite, 65.200.*

- 65.547 Social Stratification (3)** Class, status and power relations in society. Caste, estate, social class, social mobility. Theories and empirical research findings of current importance.
- 65.548 Racial and Cultural Contacts (3)** Analysis of problems and processes deriving from contacts of peoples different as to race and/or culture. Prejudice, discrimination, conflict, accommodation, acculturation, amalgamation, assimilation.
- 65.549 Sociology of Science (3)** Science as major institution in modern society: historical development, social organization, inter-relationships; social, cultural determinants of scientific activities; contributions from sociology of knowledge, invention, technology. *Prerequisite*, 65.200.
- 65.550 The City (3)** Patterns and process of urban society. The ecological and social organization of the modern city. Urban problems and trends. Emphasis on methods of research in the field. *Prerequisite*, 65.200.
- 65.580 Movements and Institutions of European Christianity (3)** Social forces in establishment of western Christendom. Medieval Catholic society. Emergence of Protestant movements, forms of piety, ethics, church polity, social orientation. Reaction to changing economic environments.
- 65.581 Movements and Institutions of American Christianity (3)** Triumph of the free church movement, multiformity of socio-religious manifestations, social role of revivalism, degrees of social activism, ecumenical objectives versus plurality of American Protestantism.

Population and Society

- 65.551 Analysis of Population Trends (3)** Measurement and analysis in demography with substantive treatment of population trends. Stable population theory; factors affecting fertility and mortality; population projection; distribution and community structure.
- 65.554 Morbidity and Mortality Analysis (3)** Various concepts of a population; increment and decrement functions, measurement of morbidity, life table functions, survivorship function as research tool, biological aspects of life tables. *Prerequisite* 69.200.
- 65.751 Seminar in Population Studies (3)** Experimental investigations of selected problems, with related discussion of theory and methodology.

Applied Sociology

- 65.561 Public Welfare: Principles and Problems (3)** Principles underlying public welfare programs and major problems in the field. Organizational structure, methods of operation of federal, state, local agencies administering programs. *Prerequisite*, 65.200.
- 65.562 Social and Economic Aspects of Health (3)** Health problems in terms of expenditures, personnel, facilities, organization of adequate health service; public health practices; analysis of legislative proposals in the health field. *Prerequisite*, 65.200.
- 65.563 Causes of Crime (3)** Nature, causal factors in delinquent behavior. Natural history of delinquent careers. Programs and policies for controlling problems of delinquency and crime in urban areas. *Prerequisite*, 65.200.
- 65.566 Aging in Modern Life (3)** Social, economic, health problems related to the aging process. Changing social roles, attitudes. Provision for the economic, health, psychological, social needs of the older person.
- 65.567 Urban Redevelopment (3)** Theory and practice of urban redevelopment. Causal factors of city blight and slums; efforts of public, private agencies. Planning, financial, social, legislative aspects of urban redevelopment. *Prerequisite*, 65.200.
- 65.568 Treatment of the Offender I (3)** A critical examination of the theory, practices and problems in the fields of probation and parole of adult offenders. *Prerequisite*, 65.563.
- 65.569 Treatment of the Offender II (3)** A critical examination of the theory, practices and problems in the institutional treatment of adult offenders. *Prerequisite*, 65.563.

Inter-Departmental Social Science Major

The College offers a program leading to the degree of Bachelor of Arts with an inter-departmental major in Social Science. Those taking this distributed social science degree may elect courses, under the direction of an advisor, from the following fields: Anthropology, Business Administration, Economics, Government and Public Administration, History, International Relations, Psychology, and Sociology. Students interested in this program should consult the Chairman of one of the Social Science departments in the College. Requirements are as follows:

<i>University Requirements</i>	38-43 hours
Additional basic requirements	9 hours
Nine additional hours in introductory social science made up of three remaining courses in social sciences listed but not used to meet University requirements.	
Major courses	48 hours
Forty-eight hours selected from upper level courses in the following fields: Anthropology, Business Administration, Economics, Government, History, International Relations, Psychology, and Sociology. The distribution must be fifteen hours in each of two of the above fields and nine hours in each of two others.	
Tool requirement	6 hours
Six hours of Statistics or language as determined by student and advisor.	
<i>Electives</i>	to complete 126 hours
The prospective teacher meeting state certification requirements may substitute Education for one of the nine credit hours fields under major courses.	

Division of
EDUCATION AND COMMUNICATION



COMMUNICATION

Broadcasting

Journalism

Public Relations

EDUCATION

FAMILY LIFE

NURSING EDUCATION

PHYSICAL EDUCATION



Communication

Professor: WILLETT MAIN KEMPTON (Chairman). *Associate Professors:* THEODORE H. LEVIN; HARVEY J. POPE. *Assistant Professor:* H. D. CRAWFORD. *Adjunct Professors:* LAWRENCE W. BECKERMAN; GEORGE CREEL; FRANKLIN DUNHAM; STANLEY FIELD; JAMES R. MOCK; FRANK H. MORTIMER; CARL L. SHIPLEY; HAROLD STEPLER. *Professorial Lecturers:* DOUGLAS BAILEY; LOY BAXTER; PATRICIA BEALL HAMILL; PAUL R. HILL; EDWIN TRIBBLE. *Lecturers:* SIDNEY ABEL; HARRY CULLIS; CARL G. DEGEN; ROGER L. GORDON; HOWARD R. HARING; MELVIN HAYES; ALBERT E. HEMSING; ROBERT S. MACK; ROBERT W. MILLER; JAMES A. REYNOLDS; HAROLD V. SEMLING; MARY E. SPEAR; CHARLES TOWER; DAVID VON SOTHEN; JULES WITCOVER; WALTER WOOD.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Arts.

University Requirements 38-43 hours
Students majoring in communication are advised to include Economics I (3), American Government: National (3), and General Psychology (3), as a part of their University requirements.

Departmental Requirements:

ASSOCIATE IN ARTS (Major in Communication)

Major courses 18 hours
17.220 Introduction to Journalism (3), 17.260 TV-Radio Practice (3), and 6 additional hours (including a writing course) in journalism or television and radio.
Related or other communication courses 6 hours

BACHELOR OF ARTS

17.220 and 17.260 required of all majors, together with 12 hours advanced humanities or social science courses.

Major in Broadcasting

TV-Radio courses 30 hours
Related courses 12 hours

Major in Journalism

Journalism courses 30 hours
Related courses (including advertising and public opinion) 12 hours

Major in Public Relations

Public Relations courses (including 12 hours in 2 media fields) 30 hours
Related courses (including advertising and public opinion) 15 hours

Interdepartmental major

Students concerned with the performance arts may elect a combined major in Broadcasting and in Speech and Drama.

Major courses (both departments) 27 hours
Specialized courses in one area 9 hours
Related courses 9 hours
Advanced social sciences, humanities or education 18-24 hours

Electives:

ASSOCIATE IN ARTSto complete 63 hours
BACHELOR OF ARTSto complete 126 hours

Course Requirements: Minimum of 30 hours of approved graduate work (including 17.500 Communication History and 17.501 Communication Law), 6 hours may be in 17.799 Thesis Seminar in Communication (3-6).

Written Comprehensive Examinations: 3, including one in the communication history, law or theory; one in a specialized field of journalism, public relations, television and radio, visual communication or graphic arts; and one in another specialized field of communication or in a related field.

Other Requirements: Thesis.

UNDERGRADUATE COURSES

- 17.220 Introduction to Journalism (3)** Survey of journalism: newspapers, magazines, business publications, vocal journalism. Stress on current practices; requirements, opportunities, responsibilities. *Required of all Communication majors.*
- 17.260 TV-Radio Practices (3)** Comprehensive survey of broadcasting and telecasting operation; history and sociological impact of these media; standards of good taste and judgment; concepts of management, advertising, programming. *Required of all communication majors.*
- 17.262 TV-Radio Procedures (3)** TV-Radio station organization and operation. Program structures. Lab. experiences in techniques of production, performances, engineering, and writing. *Required of all TV-Radio majors. Prerequisite to advanced courses.*
- 17.320 News Reporting (3)** Basic instruction in news writing. Types of news stories. Emphasis on practical situations encountered in newsrooms of papers and press associations.
- 17.332 The Small Newspaper (3)** Study and discussion of special problems of community and special interest dailies and weeklies, including non-metropolitan and suburban newspapers.
- 17.361 TV-Radio Writing (3)** Theory and practice in radio-TV script writing. Written assignments including interviews, openings and closings, music continuity, newscast, radio and TV drama and commercials. *Prerequisite, 17.262.*
- 17.362 TV-Radio Speaking (3)** Effective microphone speaking through individual analysis; preparation and delivery of speech assignments—news, sports, commercials, and special events; introduction to acting and announcing. *Prerequisite, 17.262 or equivalent in experience.*
- 17.364 TV-Radio Announcing (3)** Advanced microphone training. On-air, off-air, announcing duties and responsibilities. Sustaining, commercial announcing; narration, interviews, reporting, sports and audience participation. Live and filmed commercials. *Prerequisite, 17.362 or equivalent.*
- 17.366 TV-Radio Acting (3)** Studio practice in casting, rehearsing, acting: auditions, signals, characterizations, dialects, pacing, memorization. Study of microphone techniques; relation of actor to other elements in production. *Prerequisite, 17.362.*
- 17.462 Audio Effects for TV-Radio (3)** Function of music and sound in broadcasting: planning, clearance, talent selection; sources of recorded and live sound effects and incidental music; copyright, artists' unions. (43)
- 17.468 Radio Production and Direction (3)** The artistic concepts in directing the radio script; analysis, casting, staging, interpretation, rehearsals; the producer-director's relationship to sound, music, engineering and talent. Practical lab experience in directing. *Prerequisite, 17.262.*
- 17.470 Radio Station Procedures I (3)** Practical problems in all departments of radio broadcasting. One hour of lecture and 8 additional hours a week of supervised training in University broadcasting facilities. *Prerequisite, permission of instructor.*
- 17.471 Radio Station Procedures II (3)** Advanced problems in all departments of radio broadcasting. One hour of lecture and 8 additional hours a week of supervised training in University broadcasting facilities. *Prerequisite, permission of instructor.*

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

Broadcasting

- 17.500 Communication History (3)** Evolution and development of newspapers, magazines, radio, motion pictures, and television as communication media. Influence of historic backgrounds on contemporary ethics and practices.
- 17.501 Communication Law (3)** Current legal problems and theory of controls in journalism, visual communication, television and radio. Analysis of libel suits, copyright infringements. No previous knowledge of law required.
- 17.507 Freedom of Information (3)** Investigation of access and barriers to information at local, state, national, and international levels. Information access rights and responsibilities of communication media. Individual research projects.
- 17.585 School Broadcasts (3)** Utilization of existing broadcasting stations by elementary and high school teachers. Community and in-class program planning, talent selection, production and direction.
- 17.560 TV-Radio Dramatic Writing (3)** Special techniques required for dramatic scripts—sketches, originals, adaptations. Emphasis on plotting, characterization, dialogue, pacing, mood. Use of music and sound for dramatic effects. *Prerequisite*, 17.361.
- 17.561 TV Dramatic Writing (3)** Practical experiences in writing the one hour drama. *Prerequisite*, 17.560.
- 17.562 TV Writing: Advanced (3)** Preparation of written materials for television. Differences between television and radio scripts; research methods used for writing commercials, informational programs, and dramatic shows. *Prerequisite*, 17.361.
- 17.563 TV Studio Operations (3)** Relationship of cameras, lighting, staging and audio equipment to TV studio production; differences between station and network operations. *Prerequisite*, 17.262.
- 17.567 Advanced TV-Radio Acting (3)** Advanced study of talent problems and acting before cameras and microphones in studio situations. Laboratory fee, part-time students, \$3. *Prerequisite*, 17.366.
- 17.569 Advanced TV Production and Direction (3)** Artistic concepts in directing the TV script; analysis, casting, staging, interpretation, rehearsal; producer-director's relationship to talent, sound, music, engineering, other technical aspects of production. Practical lab. experiences in directing. Laboratory fee, part-time students, \$3. *Prerequisite*, 17.563.
- 17.570 TV-Radio Management (3)** Broadcasting as a business; network affiliation versus independent operation; training a station staff; labor problems; functions and interrelationships of broadcasting departments; standards of practice. *Prerequisite*, permission of department.
- 17.571 TV-Radio Advertising (3)** Television and radio advertising and selling techniques. Advertising agencies—organization and functions; ratings, rate cards, contracts; commercial announcements, programs; audience, market, product analysis; sales campaigns.
- 17.572 TV Programming (3)** Audience reactions; program building, traffic, scheduling for stations and networks. Procedures used in studio and remote productions. Usefulness of films and visual materials. Studio observation.
- 17.573 TV Workshop (3)** Advanced training in all phases of television studio production, including script writing, acting, directing, and producing. Enrollment limited, written application required in advance. *Prerequisite*, 17.563 and 17.569. Laboratory fee, all students, \$10.
- 17.574 TV Production Laboratory (3)** Experimental program formats and research in studio production methods. Application of dramatic principles to television situations. Integration of motion picture, slides, and special visual effects. Enrollment limited; written application required in advance. Laboratory fee, all students, \$10.
- 17.660 Educational TV-Radio (3)** Methods of using radio and television as teaching media; sources of programs; creation of instructional materials.

- 17.661 Teaching with Television (3)** Nature of educational telecasts. Scope of impact at all school levels; integration with curricula. Adult viewing; courses for college credit. Programming trends in educational telecasting.
- 17.662 TV in the Public Interest (3)** Informational telecasts, both non-profit and commercial. Analysis of current public service programs; educational TV; comparisons of U. S. and foreign programming.

Journalism

- 17.520 Editing: Newspapers and Periodicals (3)** Training to develop editorial judgment and skills in processing material for publication. Study of problems and practices in making assignments, editing copy, handling departments.
- 17.521 Editorial Writing (3)** Practice in writing editorials on current subjects. Publication opportunities. Study of newspaper, trade publications, and magazine editorial policies. Analysis of editorial columns and interpretive reviews.
- 17.522 Magazine Journalism (3)** Survey of contemporary magazines; various types of periodicals, their backgrounds, trends, functions; staff organization, free lance sources, editorial policies and practices.
- 17.523 Pictorial Journalism (3)** Study of photographic requirements and techniques of newspapers, magazines, syndicates, and trade publications. Training in professional planning, taking, and editing of news and feature photographs.
- 17.524 Advanced News Reporting (3)** Problems of specialized reporting. Washington and foreign news correspondence. Students cover assignments in these fields, and carry on individual research projects.
- 17.525 Feature Writing (3)** Practice in writing feature articles for newspapers, magazines, and business publications. Study of markets and slanting techniques. Preparation and revision of articles for publication.
- 17.526 Advanced Feature Writing (3)** Preparation, discussion, and revision of articles for publication by magazines, business publications, syndicates, and newspapers. Author-editor relationship for non-fiction books. *Prerequisite*, 17.525.
- 17.528 TV-Radio Newswriting (3)** Newscasting functions and organization of station and network news staffs. Emergency and special events activities. Practical experience using actual wire copy and source materials.
- 17.530 Business Journalism (3)** Periodicals, newspapers devoted to business and industry; editorial problems and practices of publishing trade journals and house organs.
- 17.532 Graphic Arts (3)** Distinguishing characteristics of type, affinity of type faces, composition, layout, typographic design. Printing, photoengraving, gravure, and lithography. Basic information for planning pamphlets, books, folders.
- 17.533 Graphic Arts: Advanced (3)** Analysis of printing for effectiveness in layout and design, use of illustrations. Laboratory work in the production of books, pamphlets, and folders.
- 17.534 Graphic Presentation of Data (3)** Statistical charts, diagrams and other graphic methods of interpreting factual materials. Functions, theory and use of graphics for various publications, displays, lectures.
- 17.535 High School Journalism (3)** Newspapers, magazines, and yearbooks studied in relation to their application to problems of advisers of high school publications.

Public Relations

- 17.540 Public Relations: Theory and Practice (3)** Survey of public information and public relations programs. Media employed for mass communication—advertising, press, radio, periodicals, pamphlets, films. Case studies of current practices.
- 17.541 Publicity Writing (3)** Practical writing techniques for public relations, publicity, and promotional programs. Preparation of articles for newspapers, magazines, and trade journals; radio scripts; promotional booklets.
- 17.542 Promotional Campaigns (3)** Case studies of promotional methods for social organizations, business, and government. Analysis of specific public relations problems. Development of a promotional campaign by each student.
- 17.543 Public Service Broadcasting (3)** Production problems: budget, scripts, casting, rehearsals, timing, sound, music, visuals, showmanship; producer-director's relationship to talent and engineering. Practical application under studio conditions.

- 17.544 Public Relations in Government (3)** Analysis of objectives and problems of governmental agencies in their relations with various publics. Influence of public information on efficiency of administration.
- 17.545 Public Relations in Business (3)** Media and techniques for public relations; emphasis on business and industrial relationships with their various publics—such as labor, trade, dealer, customer, stockholder, and community.
- 17.550 Press Relations (3)** Publicity methods; public service aspects of daily, Sunday and trade papers.
- 17.640 Public Relations Policies (3)** Formulation of policies for long-range public relations programs in business, trade associations, social and civic organizations, federal agencies. Methodology in implementing policy and evaluating results.

Visual Media

- 17.510 History of Motion Pictures (3)** Motion pictures from their invention to the present. Films emphasize technical and aesthetic developments for students in history, sociology, and communication. Laboratory fee, all students, \$3.
- 17.513 Visual Communication (3)** Basic problems of picturing abstract ideas and information through the audio-visual arts; latest developments in cinema, graphics, TV, etc., for advertising, education, public relations.
- 17.514 Audio-Visual Techniques (3)** Workshop course in selection and use of audio-visual materials for instructional purposes and for other specific communication problems.
- 17.515 Motion Picture Workshop (3)** Production and use of films for television; theory, observation and practice with lighting, audio effects, camera operation on sound stage in studio. Laboratory fee, all students, \$15.
- 17.516 TV Film Production (3)** Advanced course in production and use of motion pictures in television. Laboratory training in editing and sound recording. Actual preparation of films for television stations. *Prerequisite, permission of departmental chairman.* Laboratory fee, all students, \$10.

Seminars

- 17.720 Research Seminar in Journalism (3)**
- 17.740 Research Seminar in Public Relations (3)**
- 17.760 Research Seminar in Telecommunications (3)**
- 17.799 Thesis Seminar in Communication (3-6)**

Education

Professors: SAMUEL ENGLE BURR, JR. (Chairman); ALBERT W. BOLDT; JOHN W. DEVOR. *Assistant Professors:* GLADYS V. JORGENSEN; SUSAN S. OLSON; WYLIE H. RUSSELL; JOHN WAKEFIELD. *Instructor:* ROBERT N. JONES. *Adjunct Professors:* WILMER F. BENNETT; FRANCIS J. BROWN; B. WILLAR DESHAZO; STANLEY V. SMITH; WARD STEWART; ROBERT N. WALKER. *Professorial Lecturers:* JOHN W. ASHER; EVELYN BULL; HOWARD F. DIDSBURY, JR.; WILLIAM H. JENKINS; DANIEL V. LLOYD; OLIVE MCKAY; MARY DEY MORRIS; CHARLES L. POWELL, JR.; VIRGIL WALKER. *Lecturers:* EILEEN BROMLEY; HARRY CHASEY; CLAIRE GODFREY; ALMA SHUGRUE; LOUISE S. WALKER.

Degree Programs

UNDERGRADUATE DEGREES—Associate in Arts, Bachelor of Arts.

Undergraduate students who plan to become teachers in secondary schools are advised to major in the field in which they plan to teach. They should complete 57.200 General Psychology (3) and the courses in education required for teacher certification in the state in which they intend to teach. The requirement in education varies from state to state but usually is 16-24 hours. A student interested in preparing for secondary school teaching should consult the Chairman of the Department of Education and the Chairman of the department in which he intends to major for information concerning the requirements applicable to his case. The department offers an Associate Degree with a major in elementary education (18 hours). The department offers programs leading to the degree of Bachelor of Arts with a major in elementary education for students who plan to become teachers in elementary schools. Requirements are as follows:

University Requirements 38-43 hours

Students majoring in elementary education are advised to complete 57.200 General Psychology (3) as a part of their University requirements.

Department Requirements:

ASSOCIATE IN ARTS IN ELEMENTARY EDUCATION

Major courses	18 hours
Electivesto complete	63 hours

BACHELOR OF ARTS IN ELEMENTARY EDUCATION

Major courses	30 hours
Related courses	12 hours
Electivesto complete	126 hours

GRADUATE DEGREES—Master of Arts, Master of Education, Doctor of Education.

MASTER OF ARTS

Prerequisites: A student planning to teach must present evidence of adequate undergraduate preparation for the subjects or areas in which he wishes to teach.

Course Requirements: A minimum of 30 hours approved graduate work which may include up to 6 hours in 21.799 Thesis Seminar or 21.795-96 Research Seminar.

Comprehensive Examinations: Each candidate must pass 3 comprehensive examinations all of which are to be taken during the same examination period. Two of these must be in fields of education and may include Methods and Materials of Teaching in one subject-matter field. One of the examinations may be in a field of some other department if approved by the Department of Education.

Other Requirements: Thesis (3-6) or 2 semesters of 21.795-96 Research Seminar in Education.

MASTER OF EDUCATION (beginning July 1, 1959)

This program is designed to meet the special needs of students who now serve or who desire to serve as (1) Elementary School Teachers, (2) Secondary School Teachers, or (3) School Administrators, Supervisors, Counselors, or School Business Officers. This program provides for students who contemplate taking both the undergraduate and Master of Education degrees at the American University, but it also makes provision for those who may do part or all of the work for the undergraduate degree elsewhere.

DOCTOR OF EDUCATION

Prerequisites: A student who plans to teach must present evidence of satisfactory preparation on the undergraduate level and/or some successful teaching experience.

Course Requirements: A total of 72 credit hours of graduate work with a better than B average, at least 30 of which must be completed at The American University. This may include credits earned in a Master's Degree program.

Comprehensive Examinations: Each candidate must pass 5 comprehensive examinations. At least 3 of these must be in areas in Education and 1 must be in a subject matter field. One is optional, either in Education or in some other area.

Other Requirements: Two tools of research, 6 hours of Thesis Seminar (no course credit), a dissertation, an oral examination on the dissertation.

UNDERGRADUATE COURSES

- 21.100 Personal Adjustment in College (1)** Course planned to help student to achieve mature physical, social, intellectual, emotional, spiritual habit patterns and to deal with problems of adult life in the University, the community, the contemporary world.
- 21.200 Introduction to Education (3)** Survey and comparison of schools of thought and the nature, objects, functions of American education. Attention to the significance of the purposes of the schools. *Prerequisite to all other courses in the department.*
- 21.300 Development of the Elementary School Child (4)** Growth, development of the elementary school child. Consideration of physical, mental, sociological, psychological, moral phases and their interrelation. Role of the school in guiding such development.
- 21.301 Adolescent Development (4)** Physiological, sociological, psychological factors of adolescent growth, development. Freedom and independence of choice, heterosexual interests, individual responsibility. Motivation and values in education.
- 21.310 History of Education in American Culture (3)** European backgrounds of American education. Distinctive patterns since colonial times. Social, economic, religious, scientific, moral, political, patriotic, legal, intellectual forces that have influenced education. Study of individual thinkers.
- 21.320 Psychology of Education (3)** Fundamental psychological problems encountered in education. Nature and control of learning process; theories of motivation; development of skills and knowledge; creative learning and critical thinking. *Prerequisite, 57.200 General Psychology.*
- 21.340 Secondary School Curriculum (4)** Development, organization, operation of the secondary school curriculum particularly as related to adolescent needs, the nature of the learning process, the contemporary social scene. Required of all students planning to teach in secondary school. *Prerequisite, 21.301.*

- 21.342 Methods of Teaching in Secondary Schools I (3)** Study of teaching methods, in particular specialized subject-matter fields such as education, art, business education, driver education, English and speech, mathematics, modern languages, natural sciences, nursing education, physical education, social sciences. *Prerequisite, permission of department chairman.*
- 21.343 Methods of Teaching in Secondary Schools II (3)** Continuation of 21.342.
- 21.350 Elementary School Curriculum (4)** Program of the modern elementary school, grades 1 through 6. Nature of the learning process, needs of young children, the larger concept of elementary education. Includes observation in elementary schools, lecture and discussion periods.
- 21.352 Methods of Teaching in Elementary Schools (General) (3)** Intensive study of the methods used in teaching in modern elementary schools. Over-all aspect of methods will be considered rather than extended study of methods in particular subjects. *Prerequisite, permission of the department chairman.*
- 21.354 Methods of Teaching Reading in Elementary Schools (3)** Special course in elementary school methods, with emphasis on reading. Should follow 21.353. *Prerequisite, permission of department chairman.*
- 21.355 Methods of Teaching Arithmetic in Elementary Schools (3)** Special course in elementary school methods, with emphasis on arithmetic. Should follow 21.353. *Prerequisite, permission of department chairman.*
- 21.410 Philosophy of Education (3)** Course for advanced undergraduate students in the processes, purposes, methods of education, with special reference to the organization of the school and its curriculum. *Prerequisite, permission of the instructor.*
- 21.440 Principles of Education I (3)** Study of the basic principles of education in the U. S. Elementary, secondary, higher education are included.
- 21.441 Principles of Education II (3)** Continuation of 21.440.
- 21.444 Observation and Student Teaching in Elementary Schools, (2-8).** Actual observation, preparation of lesson plans, student teaching. In elementary grades. Hours of work and conferences to be arranged with supervisor. Fee, \$10.00 per credit hour, not to exceed a maximum fee of \$60.00. (May be repeated, by special permission.)
- 21.445 Observation and Student Teaching in Secondary Schools. (2-8).** Actual observation, preparation of lesson plans, student teaching. In secondary schools. Hours of work and conferences to be arranged with supervisor. Fee, \$10.00 per credit hour, not to exceed a maximum fee of \$60.00. (May be repeated, by special permission.)

ADVANCED COURSES

(500-level courses open to advanced undergraduate and graduate students, 600- and 700-level courses open only to graduate students)

- 21.510 Children's Literature in the Elementary School Curriculum (3)** Where and how to find suitable stories and related materials for use in each of the elementary grades. Use of stories in the curriculum. The child's appreciation for literature.
- 21.511 Physical Education, Games, Health Programs in the Elementary School Curriculum (3)** Course designed chiefly for classroom teachers in elementary schools. What the teacher can and should do to supplement the work of the physical education specialist.
- 21.512 Natural Sciences and Mathematics in the Elementary School Curriculum (3)** Choice of science and mathematics content for use in elementary schools. Grade placement of content. Objects, materials needed in desirable programs.
- 21.513 Teaching Foreign Languages in Elementary and Secondary Schools (3)** Comparison of several theories of language teaching. Desirable content material for language instruction on both levels. How and when to introduce language instruction into the curriculum.
- 21.514 Teaching the Social Studies in Elementary and Secondary Schools (3)** Study of objectives of teaching the social studies and results which should be secured. Special reference to recently renewed emphasis on American history, loyalty to the democratic system of government, the capitalist system.

- 21.515 The Core Curriculum in Elementary and Junior High Schools (3)** Definitions of the core curriculum. Study of the use of core curriculum in various schools. Preparation of the teacher who will teach "core." Relationship to other areas in the curriculum.
- 21.516 Teaching Children in Special Classes (3)** Study of the special curricula commonly provided in classes for the mentally retarded, the brain-damaged, the physically handicapped, those presenting behavior problems. Goals which can be set for instruction in such classes.
- 21.517 The School and Modern Social Problems (3)** Study and analysis of the social basis of the curriculum. Special reference to pupil needs. Current developments; methods of adapting the school to society. *Prerequisite, permission of instructor.*
- 21.518 Special Educational Programs for Retarded Pupils in Elementary Schools (3)** Provisions for class work and group activities for retarded children in the elementary grades of public and private schools, emphasizing methods, materials, and objectives.
- 21.519 Physical Sciences for Elementary School Teachers (3)** Recent findings in the fields of chemistry and physics, with special reference to science knowledge expected on the part of the elementary school teacher.
- 21.520 Advanced Psychology of Education (3)** Psychological principles, research methods basic to education. Consideration of motivation, attitudes, mental abilities, psychology of school subjects. Required of students taking graduate degree programs in education. *Prerequisite, 57.200 General Psychology or permission of instructor.*
- 21.521 Biological and Geological Sciences for Elementary School Teachers (3)** Recent findings in the fields of biology and geology with special reference to science knowledge expected on the part of the elementary school teacher.
- 21.522 Special Educational Programs for Gifted Pupils (3)** Provisions for class work, group and individual activities for gifted children in elementary and secondary schools. Emphasis on methods, materials, and objectives.
- 21.527 Student-Teacher Relations in the Classroom (3)** Study of the development of wholesome classroom relationship involving both teacher and pupils. Some phases of the daily work of the teacher in the area of good mental hygiene.
- 21.530 Library Procedures for Teachers (3)** Presentation of what teachers should know about the operation and use of school libraries and public libraries.
- 21.542 Curriculum Construction in Elementary Schools (3)** Methods and procedures used in curriculum construction for modern elementary schools. Study of certain selected curricula in use today.
- 21.555 Adult Education I (3)** Administration, supervision, financing, housing, scheduling, etc., of adult education in public school systems, in recreation programs, and under other governmental agencies. Relationship to other educational programs and agencies.
- 21.556 Adult Education II (3)** The history, theory, curricular content, program and personnel of adult education programs, as conducted by public school systems, recreation departments, and other agencies.
- 21.566 Practical Procedures for Use in Today's Schools (3)** Workshop-type course covering selected phases of principles, methods, curriculum construction, supervision, administration. Three meetings a week and other hours as arranged.
- 21.557 Teacher Problems in Speech (3)** Discussion of speech problems and procedures for the classroom teacher. Elementary speech pathology and speech improvement practices for public school children.
- 21.560 Administrative Problems of the Modern School (3)** Practical consideration of internal organization of elementary and high schools. Emphasis on ways good teachers and administrators develop working relationships. Basic course for all teachers. *Prerequisite, permission of the instructor.*
- 21.565 Institute on Current Problems in Education I (3)** Problems in the American educational scene, including matters in the areas of administration and supervision, audio-visual methods and materials, general principles of education, and teaching methods and curriculum construction (elementary and secondary).
- 21.570 Anatomy and Physiology of the Vocal Mechanism (3)** In addition to a study of the anatomy and physiology of the vocal mechanism, course includes phonetics and the physics of sound. Fee, all students, \$5.

- 21.571 Speech Pathology (3)** Diagnosis of speech defects. Methods of therapy. Includes consideration of stuttering, delayed speech, defective articulation, speech of those with cerebral palsy, speech of those with defective hearing, speech of those with cleft palate. Clinical demonstrations. Fee, all students, \$5.
- 21.572 Speech Improvement in the Classroom (3)** Consideration of the role of the classroom teacher and the school supervisor in bringing about improvement in the speech habits of all children in the classroom. Special attention to unusual needs that can be met by the teacher.
- 21.575 History of American Educational Policy: Advanced (3)** Survey of American educational policy from colonial period to the present. Emphasis on major trends, as: the rise of the academies, the progressive education movement, etc.
- 21.580 Problems in Federal Education Policy (3)** Philosophical basis for relationship between American educational system and government at local, state, national levels. Comparisons with educational systems abroad. Implications of education for national defense and improved world understanding.
- 21.581 Issues and Programs in International Education (3)** Survey of educational activities designed to improve international relations and world understanding, including the international exchange programs, technical assistance missions, UNESCO, etc.
- 21.610 Philosophy of Education: Advanced (3)** Study of doctrines and principles underlying public and private education in America. Special consideration to the purposes, processes, methods of elementary and secondary education.
- 21.615 Comparative Education: I The Western World (3)** Survey and comparison of educational plans and procedures used in various countries. Greatest attention will be directed to education in the United Kingdom, France, Germany, Canada, and the Latin American nations.
- 21.616 Comparative Education: II The Orient (3)** Similar to 21.615, with emphasis upon the educational programs of the far east, rather than the western world.
- 21.617 Education in the U.S.S.R. (3)** A comparative education course stressing educational practices and procedures used in the Soviet Union, and a comparison with educational programs in the United States of America.
- 21.618 A Study of the Educational Program of UNESCO (3)** A critical study of the organization, functions, procedures, and purposes of the educational program of UNESCO and of the U. S. Commission on UNESCO.
- 21.640 Curriculum Construction in Secondary Schools (3)** Psychological, cultural, and educational bases of the secondary school curriculum. Practice in construction of curricular materials to meet modern educational problems.
- 21.642 Current Trends and Practices in Elementary Education (3)** A survey of current developments in American elementary schools.
- 21.650 Essentials of School Law (3)** A study of the laws governing education in the United States, with special reference to the District of Columbia, Maryland, and Virginia.
- 21.652 Financial and Business Administration for Schools (3)** School budgets, bonds, and taxes. Selecting, buying, and distributing supplies and equipment. Accounting systems for finances and materiel. Other business aspects of education.
- 21.660 Internal School Administration (3)** Organization and administration at the local level. Problems of principal in relation to pupil personnel, teacher personnel, finance, public relations, professional problems. *Prerequisite, permission of instructor.*
- 21.661 Elementary School Organization (3)** The organization of the American elementary school. Six grades versus eight. How the school is organized. Some reference to supervision.
- 21.662 Secondary School Organization (3)** The organization of secondary education. Junior high schools, senior high schools, and six-year high schools. How the school is organized. Some reference to supervision.
- 21.670 Improvement of Instruction in the Secondary School (3)** Survey of literature on supervision of instruction, improved teaching methods, and use of teaching aids. Special projects for teachers of various high school subjects. *Prerequisite, a course in the secondary school curriculum or permission of instructor.*
- 21.671 Improvement of Instruction in Elementary Schools (3)** Similar to course 21.670, designed to meet needs on the elementary school level.

- 21.680 Current Practices of Principals, Supervisors, and Superintendents of Schools (3)** A consideration of the problems and procedures currently used by supervisors and administrators in elementary and secondary schools. Emphasis upon current periodical literature in this field.
- 21.710 Seminar in Education (3)** To operate as a cycle stressing, from semester to semester, the following areas: curriculum construction, public relations, school administration and supervision, educational research, methods and materials of teaching, etc. (May be repeated.)
- 21.740 Methods and Materials of Educational Research (3)** Seminar type course designed for graduate students, especially those involved in nonthesis research projects. Use of library facilities, statistical procedures, maps, charts, diagrams, statistics, graphic representation, and presentation of the results of educational research.
- 21.795 Research Seminar in Education (3-6)** A seminar type course in which research paper will be required. Designed especially for M.A. candidates as a thesis alternative.
- 71.799 Thesis Seminar in Education (3-6)**

Family Life

The College offers a curriculum in Family Life which is intended to prepare students for intelligent family living. The curriculum is a broad one which makes special appeal to women who expect to find their principal career in homemaking. Many men, however, elect part or all of the program. It leads to an Associate in Arts degree at the end of two years. A major is not offered for the Bachelor of Arts degree, but the student may plan an inter-departmental major in the social sciences or education including these courses in family life.

A modern home economics laboratory, located on the third floor of McKinley Building, is equipped for courses in nutrition, foods, textiles, and home management. Family Life as a field of study is under the administrative direction of the Chairman of the Department of Education. Students are referred to this office for counseling and an interpretation of the requirements for degrees.

Family Life is basically an inter-departmental program with courses, beyond University requirements, in Business, Education, Psychology, Religion and Sociology. The following home economics courses, however, are offered:

UNDERGRADUATE COURSES

- 30.201 Home Management (3)** Introduction to the problems, skills and values of modern home life. Survey of resources and aids. Personal and family budgeting. Planning of effective family living.
- 30.221 Marriage and Family Living (3)** Marriage goals, husband-wife relations, pregnancy, attitudes toward children, use of money, working wives and mothers, older members of the family.
- 30.231 Nutrition and Foods (3)** Study of diet and factors influencing individual requirements. Nutritive values of different foods. Meal planning in the home. Basic food preparation. Laboratory fee, all students, \$10.
- 30.251 Clothing & Textiles (3)** Textile fibers and fabrics. Clothing for the family. Basic art principles and good grooming. Care of clothing. Consumer problems.
- 30.321 Child Care and Development (3)** The preschool child in relation to his home. The understanding of children. Goals in personality development.
- 30.351 Clothing Construction I (3)** Short cuts to professional finish. Three or more garments made from commercial patterns. Students furnish their own materials.
- 30.352 Clothing Construction II (3)** Advanced techniques of clothing construction. *Prerequisite, 30.351.*

Nursing Education

Degree Programs

UNDERGRADUATE DEGREES—A program leading to a degree of Bachelor of Arts with a major in Nursing Education is available to students who have completed their basic professional course in nursing and have been certified as registered nurses. Advanced credit up to 30-36 hours may be granted for the basic professional course and applied toward the total of 126 hours required for a degree. Students qualify for the bachelor's degree upon completion of additional University and departmental requirements described below.

University Requirements38-43 hours

Departmental Requirements:

Major courses 16 hours

45.300 Foundations of Nursing (3), 45.301 Social and Health Aspects of Nursing (3), 45.410 and 45.411 Teaching Nursing in Clinical Fields I and II (4), 45.420 Administration of the Hospital Nursing Unit (3) and 45.490 Senior Problem Analysis (3).

Related courses 24 hours

Tool course 3 hours

23.170 Voice and Diction (3)

Electivesto complete 126 hours

UNDERGRADUATE COURSES

45.300 Foundations of Nursing (3) Survey of historical foundations, current trends and developments in nursing, and their relationship to the present social situation.

45.301 Social and Health Aspects of Nursing (3) Philosophy of comprehensive nursing care. Survey of community resources available to meet health needs of special age groups and special clinical conditions.

45.410 Teaching Nursing in Clinical Fields I (2) Functions and responsibilities of clinical instructor; content and method for the clinical course; planned program of experience for students; measurement of student attainment.

45.411 Teaching Nursing in Clinical Fields II (2) Continuation of 45.410, which is prerequisite to this course.

45.420 Administration of the Hospital Nursing Unit (3) Administrative, supervisory and teaching responsibilities of the head nurse for meeting the needs of patients and personnel.

45.421 Administration of the Hospital Nursing Unit II (3) Continuation of 45.420, which is prerequisite to this course.

45.490 Senior Problem Analysis (3) Individual study and research on a practical problem in the field of nursing. Conferences with the instructor. Research paper required.

Physical Education

Assistant Professors: DAVID L. CARRASCO (Chairman); VIRGINIA HAWKE; RUTH McFEETER. *Instructors:* ROBERT H. FRAILEY; JAMES WILLIAMS.

Degree Programs

UNDERGRADUATE DEGREE—Bachelor of Arts.

University Requirements 38-43 hours

Departmental Requirements 34 hours

Professional courses in Physical Education selected in consultation with an advisor.

Related courses 21-37 hours

Including 15.100 Science of Chemistry (3), 9.301 Physiology (4), 9.210 General Zoology (4), and 57.200 General Psychology (3). In addition, courses in the Department of Education are to be selected in consultation with the advisor. (15.100, 9.210, and 9.301 may be taken as part of University requirements.)

Tool courses 6 hours

23.170 Voice and Diction (3) and 23.270 Public Speaking (3).

Minor or Teaching Field 18 hours

Electives to complete 126 hours

UNDERGRADUATE COURSES

49.101 Required Physical Education—Personal Health (1) Survey of problems in community and personal health; emphasis on human development and external and internal forces which shape our lives; must be taken by all fulltime undergraduate students during the fall or spring session of their first year.

49.102 Required Physical Education—Orientation to Physical Education (1) Nature and role of physical education in the life of the individual. Basic principles of major athletic sports from standpoint of participant and spectator; must be taken by all fulltime undergraduate students during the fall or spring session of their first year.

49.103-104 Required Physical Education—Activities (1) Program stresses outdoor activities in October and November, indoor activities in December and January. Students participate in two different activities. Activities during the fall session include archery, badminton, basketball, bowling, dancing, fencing, field hockey, golf, life saving, swimming, and tennis. Activities during the spring session include badminton, basketball (women), bowling, canoeing (continues throughout the session), dancing, golf, life saving, swimming, volleyball (women). To complete 4-hour physical education requirements, fulltime undergraduates register for 49.101 and 49.102 in their first year, for 49.103 in first session of second year, and for 49.104 in second session of second year. Required physical education courses must be completed by the end of the second year.

49.120 First Aid and Safety Education (3) First aid, the treatment of conditions which legitimately fall in the sphere of the non-medical director. Causes, means of preventing accidents. Prerequisite to all courses in the department.

49.121 History and Principles of Health and Physical Education (3) Development, purpose, and scope of health, physical education, and recreation. Relation of principles of physical education to the school curriculum.

49.201 Sport Skills (1) Basic fundamentals, techniques, and strategy—Football-Basketball.

49.202 Sport Skills (1) Basic fundamentals, techniques, and strategy—Volleyball-Baseball.

49.203 Sport Skills (1) Basic fundamentals, techniques, and strategy—Soccer-Combatives.

- 49.204 Sport Skills (1)** Basic fundamentals, techniques, and strategy—Gymnastics-Track.
- 49.205 Sport Skills (1)** Basic fundamentals and techniques—Swimming-Dance.
- 49.220 Methods and Materials of Physical Education (2)** Methods and materials used in teaching physical education classes and organizing and supervising recreational activities.
- 49.221 Organization and Administration of Intramural Athletics (2)** Theory and practice in the construction and administration of intramural sports programs. Extensive study of secondary school and college programs and equipment. *Prerequisite*, 49.220.
- 49.222 Leadership Procedure (2)** Practical application of teaching procedures in adapting motor activities to the physical education program. *Prerequisite*, minimum of 12 credits in physical education. Required of all majors in physical education.
- 49.301 Water Safety Instructor (2)** Preparation for the teaching of swimming and diving. Methods, materials, and techniques of aquatics. *Prerequisite*, 49.104 Senior Life Saving.
- 49.310 Elementary School Rhythmic Activities (3)** Survey and use of accepted methods of teaching basic rhythms and singing games at the elementary school level.
- 49.315 Principles and Practices of Health Education and Services in Elementary Schools (3)** Methods, theories, techniques of health education at the elementary school level. Principles and policies of health services and guidance.
- 49.320 Kinesiology (4)** Science of bodily movement. Study of principal types of muscular exercise. Body mechanics in relation to posture, exercise, and sports. *Prerequisite*, 9.301.
- 49.321 Recreation Programs (3)** Principles and policies of recreation agencies with attention to administration, legislation, centers, equipment, personnel, and program.
- 49.322 Rules and Officiating (2)** Intensive study of rules of intercollegiate, intramural, and interscholastic sports. Techniques and methods of officiating with practice under supervision.
- 49.323 Coaching Minor Sports (3)** Principles, methods, and strategy used in coaching minor sports. Fundamentals, systems, and equipment used by coaches.
- 49.324 Coaching Major Sports (3)** Principles, methods, and strategy used in coaching major sports. Fundamentals, systems, and equipment used by coaches.
- 49.330 Principles and Practices of Health Education and Services in Secondary Schools (3)** Methods, theories, techniques of health education at the secondary school level. Principles and policies of health services and guidance.
- 49.335 Elementary School Play and Games (3)** Survey of physical education activities for use in classroom, gymnasium, and playground situations, based on the needs and interests of children.
- 49.338 Theory and Practice of Folk and Square Dancing (3)** Methods of teaching and directing folk and square dancing. Survey of materials used in elementary and secondary schools.
- 49.420 Tests and Measurements in Physical Education (3)** Introduction to the use and interpretation of measurement techniques in physical education administration survey of tests and measurements. *Prerequisite*, 57.200 *General Psychology*.
- 49.421 Organization and Administration of Physical Education and Athletics (3)** Departmental personnel, schedules, equipment, plant, and related problems.
- 31.410 or 49.425 Driver Education (1)** Techniques, methods, materials for secondary school teachers of driver education.
- 31.411 or 49.426 Traffic Safety Education Workshop (1)** Techniques, methods, materials in pedestrian protection, elementary safety education, traffic engineering, advanced driver education.



Index

Absences	35
Academic Information	34
Admission Requirements	20
Undergraduate	20
Graduate	21
Non-Degree	21
American Language Center	32
Anthropology	106
Art	43
Assistantships, Graduate	26
Auditors	21
Biology	67
Broadcasting, Radio & TV	117
Calendar, Academic	2
Cancellations & Refunds	23
Certificates, Professional	32
Chemistry	70
College of Arts and Sciences	17
Objectives	18
Communication	115
Contents, Table of	3
Counseling	33
Freshmen	33
Departmental	34
Courses of Instruction	39
Deferred Payments	23
Degrees	
Associate in Arts	28
Bachelor of Arts	29
Bachelor of Science	30
Master's Degrees	31
Doctor's Degrees	31
Dismissal, Academic	36
Distributed Science	86
Drama	61
Economics	89
Education	120
Education and Communication, Division of	113
Engineering	30
English	46
Faculty	5
Family Life	125
Financial Information	22
Foreign Student Advisor	34
General Education Program	27
Geography	93
Geology	74
Grading System	35
Graduate Admission	21
History	96
Honors Program	39
Humanities, Division of	41

Inter-Departmental Studies	30
Humanities	64
Natural Sciences	86
Social Science	112
International Relations	100
Journalism	118
Languages	50
Loans	26
Master's Program, Three-Year	32
Mathematics	77
Meal Contracts	24
Music	53
Nation's Capital, Study in the	19
Natural Sciences and Mathematics, Division of	65
Non-Degree Admissions	21
Nursing Education	126
Officers of Administration	4
Part-Time Education	32
Philosophy	58
Physical Education	127
Physics	84
Placement Center	34
Political Science	101
Pre-Professional Programs	30
Probation, Academic	36
Psychology	102
Public Relations	118
Radio	116
Reading Courses	40
Religion	58
Research Courses	40
Residence Facilities	23
Residence Requirements	36
Scholarships	26
Science Teaching, Master of Science in	86
Social Science, Division of	87
Sociology	106
Speech	61
Statistics	77
Student Activities	37
Television	116
Theater and Radio-TV, Performance Major	64
Transfer Credit	21
Undergraduate Admission	20
Undergraduate—Law, Combined Program	30
University Requirements	27
Vocational Guidance	34
Veterans, Physical Education	36
Withdrawals	35

1958

SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
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Philadelphia

DOES NOT CIRCULATE



